

L Number	Hits	Search Text	DB	Time stamp
1	4	("5882355" "6117833" "6242409" "6245115").pn.	USPAT; US-PGPUB	2003/09/16 17:11
2	3	((("5882355" "6117833" "6242409" "6245115").pn.) and (ligand or complex)	USPAT; US-PGPUB	2003/09/16 17:11
3	4	((("5882355" "6117833" "6242409" "6245115").pn.) and (ligand or complex)	USPAT; US-PGPUB	2003/09/16 17:21
4	4	((("5882355" "6117833" "6242409" "6245115").pn.) and (ligand or complex)) and (pyridyl or pyridin\$3)	USPAT; US-PGPUB	2003/09/16 17:21
5	17312	bleach\$ and (ligand or complex)	USPAT; US-PGPUB	2003/09/16 17:21
6	5980	(bleach\$ and (ligand or complex)) and (pyridyl or pyridin\$3)	USPAT; US-PGPUB	2003/09/16 17:21
7	113	((bleach\$ and (ligand or complex)) and (pyridyl or pyridin\$3)) and diaza	USPAT; US-PGPUB	2003/09/16 17:22

# SEARCH REQUEST FORM

Access DB# 104071

Scientific and Technical Information Center

Requester's Full Name: Cephia Toomer Examiner #: 71652 Date: 9/16/03  
 Art Unit: 1714 Phone Number 30 86-2509 Serial Number: 141021884  
 Mail Box and Bldg/Room Location: CP34D11 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*  
 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Ligand and complex for catalytically bleaching a substrate  
 Inventors (please provide full names): Boerzel et al

Earliest Priority Filing Date: 12/15/2000

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search claims. Attached is examples of preferred compounds. Also claim 18 is a list of compounds wherein the compound of the invention is not one of those listed. Claim 20 is directed to a compound per se. Please note that claims 1-17 are directed to a bleaching composition and claims 18-19 are should be directed to the compound (Applicant did not draft claim in the correct format. BIB sheet attached.

Thanks

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Searcher: K. Fuller  
 Searcher Phone #: \_\_\_\_\_  
 Searcher Location: \_\_\_\_\_  
 Date Searcher Picked Up: \_\_\_\_\_  
 Date Completed: 9/23/03  
 Searcher Prep & Review Time: 30  
 Clerical Prep Time: \_\_\_\_\_  
 Online Time: 90

### Type of Search

NA Sequence (#) \_\_\_\_\_  
 AA Sequence (#) \_\_\_\_\_  
 Structure (#) 6  
 Bibliographic \_\_\_\_\_  
 Litigation \_\_\_\_\_  
 Fulltext \_\_\_\_\_  
 Patent Family \_\_\_\_\_  
 Other \_\_\_\_\_

### Vendors and cost where applicable

STN ✓  
 Dialog \_\_\_\_\_  
 Questel/Orbit \_\_\_\_\_  
 Dr.Link \_\_\_\_\_  
 Lexis/Nexis \_\_\_\_\_  
 Sequence Systems \_\_\_\_\_  
 WWW/Internet \_\_\_\_\_  
 Other (specify) \_\_\_\_\_

=> FILE REG

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STRUCTURE FILE UPDATES: 22 SEP 2003 HIGHEST RN 591204-55-6  
DICTIONARY FILE UPDATES: 22 SEP 2003 HIGHEST RN 591204-55-6

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> FILE HCAPLUS

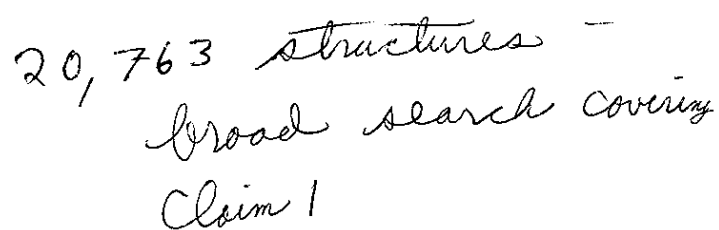
FILE 'HCAPLUS' ENTERED AT 10:22:56 ON 23 SEP 2003  
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FILE COVERS 1907 - 23 Sep 2003 VOL 139 ISS 13  
FILE LAST UPDATED: 22 Sep 2003 (20030922/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> D QUE L15  
L3 STR

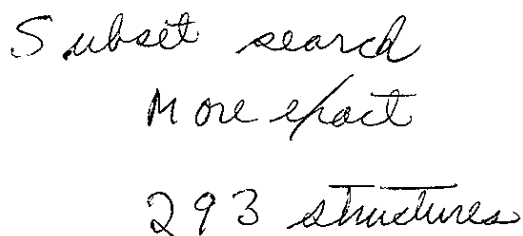


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NSPEC      IS RC      AT      7
NSPEC      IS RC      AT      8
NSPEC      IS RC      AT      9
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
L5          20763 SEA FILE=REGISTRY SSS FUL L3
L8          STR
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GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L11 293 SEA FILE=REGISTRY SUB=L5 SSS FUL L8  
 L13 43 SEA FILE=HCAPLUS ABB=ON L11  
 L14 26 SEA FILE=HCAPLUS ABB=ON L13(L) (PREP OR IMF OR SPN)/RL  
 L15 4 SEA FILE=HCAPLUS ABB=ON L14 AND BLEACH?

*4 CA references on preparation of the compounds and bleach?*

=> D L15 1-4 ALL HITSTR

L15 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:676132 HCAPLUS  
 DN 137:203051  
 TI Storage-stable enzymatic liquid **bleaching** detergent containing boron enzymatic stabilizer  
 IN Adriaanse, Arend Jan; Van Dijk, Willem Robert; Hage, Ronald; Ouwendijk, Marja; Veerman, Simon Marinus  
 PA Unilever N.V., Neth.; Unilever PLC; Hindustan Lever Ltd.  
 SO PCT Int. Appl., 131 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C11D003-386  
 ICS C11D003-39  
 CC 46-5 (Surface Active Agents and Detergents)  
 Section cross-reference(s): 67, 78

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002068574	A1	20020906	WO 2002-EP1363	20020211
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2002198127	A1	20021226	US 2002-84799	20020226
PRAI GB 2001-4980	A	20010228		

OS MARPAT 137:203051

AB An aq. liq. cleaning compn., having a pH of at least 7, comprises 1-90 wt% of surfactant, a proteolytic enzyme, and a primary stabilizer therefor. The compn. further comprises an org. substance, forming a complex with a transition metal. The transition metal complex is capable of catalyzing **bleaching** of a substrate by atm. oxygen. Thus, a transition metal complex was synthesized by complexing N,N-bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane with iron dichloride tetrahydrate in methanol. The obtained N,N-bis (pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane iron dichloride (0.1%) was mixed with protease enzyme (4% active) 0.4, sodium tetraborate (enzymic stabilizer) 3.82, sodium citrate 4.01, monoethanolamine 0.2, surfactants, and other ingredients in water to give a liq. detergent (pH = 7.4), exhibiting excellent storage stability.

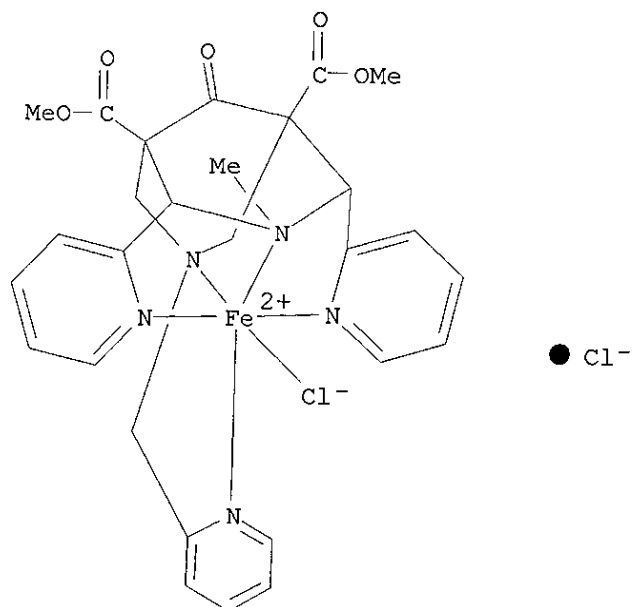
ST proteolytic enzymic liq cleaning boron stabilizer transition metal **bleaching**

IT Transition metal complexes

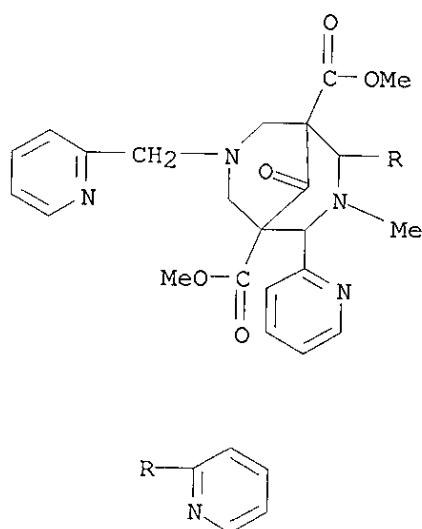
RL: MOA (Modifier or additive use); USES (Uses)

- (bleaching catalyst; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT Detergents  
(bleaching; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT Bleaching agents  
Detergent builders  
Stabilizing agents  
Surfactants  
(formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT Detergents  
(laundry, enzyme-contg.; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT Detergents  
(laundry, liq.; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT Peptides, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(modified, primary stabilizer; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 116633-52-4 129315-15-7, Iron N,N,N',N'-tetrakis(Pyridin-2-yl-methyl)ethylenediamine bis( hexafluorophosphate) 290299-33-1, N,N,N'-Tris(pyridin-2-yl-methyl)ethanediamine iron chloride hexafluorophosphate 357967-50-1, N,N-Bis (pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminomethane iron(II) dichloride  
RL: CAT (Catalyst use); USES (Uses)  
(bleaching catalyst; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 328564-06-3P, N,N-Bis (pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane iron dichloride 437985-26-7P, Chloro[dimethyl 2,4-di-(2-pyridyl)-3-methyl-7-(pyridin-2-ylmethyl)-3,7-diazabicyclo[3.3.1]nonan-9-one-1,5-dicarboxylate]iron(II)-chloride hydrate  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)  
(bleaching catalyst; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 9001-92-7, Proteolytic enzyme  
RL: CAT (Catalyst use); USES (Uses)  
(formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 9014-01-1, Subtilisin 37259-58-8D, Serine protease, modified  
RL: TEM (Technical or engineered material use); USES (Uses)  
(formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 94543-37-0P, Dimethyl 2,6-di-(2-pyridyl)-1-methylpiperid-4-one-3,5-dicarboxylate  
RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 437985-12-1P, Dimethyl 2,4-di-(2-pyridyl)-3-methyl-7-(pyridin-2-ylmethyl)-3,7-diazabicyclo[3.3.1]nonan-9-one-1,5-dicarboxylate

- RL: **IMF (Industrial manufacture)**; PRP (Properties); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)  
 (ligand, starting material; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 16858-02-9, N,N,N',N'-Tetrakis(Pyridin-2-yl-methyl)ethylenediamine  
 104170-15-2 167695-87-6, N,N-Bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)aminomethane 223504-10-7, N,N-Bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ligand, starting material; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 1330-43-4, Sodium tetraborate 7440-70-2, Calcium, uses 7775-19-1, Sodium metaborate 10043-35-3, Boric acid, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (primary stabilizer; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT 50-00-0, Formaldehyde, reactions 74-89-5, Methylamine, reactions  
 1121-60-4, Picolylaldehyde 1830-54-2, Acetone dicarboxylic acid dimethyl ester 3731-51-9, 2-Aminomethylpyridine 7758-94-3, Iron dichloride 13478-10-9, Iron dichloride tetrahydrate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- IT **437985-26-7P**, Chloro[dimethyl 2,4-di-(2-pyridyl)-3-methyl-7-(pyridin-2-ylmethyl)-3,7-diazabicyclo[3.3.1]nonan-9-one-1,5-dicarboxylate]iron(II)-chloride hydrate  
 RL: CAT (Catalyst use); **IMF (Industrial manufacture)**; PRP (Properties); **PREP (Preparation)**; USES (Uses)  
 (bleaching catalyst; formulation of proteolytic enzymic liq. cleaning compns. contg. boron enzymic stabilizer, and transition metal complex)
- RN 437985-26-7 HCAPLUS
- CN Iron(1+), chloro[rel-(1R,2S,4R,5S)-dimethyl 3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-7-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (OC-6-63)- (9CI) (CA INDEX NAME)



IT **437985-12-1P**, Dimethyl 2,4-di-(2-pyridyl)-3-methyl-7-(pyridin-2-ylmethyl)-3,7-diazabicyclo[3.3.1]nonane-9-one-1,5-dicarboxylate  
 RL: **IMF (Industrial manufacture)**; PRP (Properties); RCT (Reactant); **PREP (Preparation)**; RACT (Reactant or reagent)  
 (ligand, starting material; formulation of proteolytic enzymic liq. cleaning comps. contg. boron enzymic stabilizer, and transition metal complex)  
 RN 437985-12-1 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-2,4-di-2-pyridinyl-7-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)





L15 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:487706 HCAPLUS  
 DN 137:64938  
 TI Enhancement of air **bleaching** catalysts  
 IN Appel, Rene; Hage, Ronald; Van der Hoeven, Philippus Cornelis; Lienke, Joachim; Smith, Richard George  
 PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited  
 SO PCT Int. Appl., 33 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C11D003-39  
 ICS C11D003-28  
 CC 46-5 (Surface Active Agents and Detergents)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002050229	A1	20020627	WO 2001-EP13196	20011113
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002017030	A5	20020701	AU 2002-17030	20011113
	GB 2385866	A1	20030903	GB 2003-9155	20011113
	US 2002169096	A1	20021114	US 2001-13620	20011211
	US 6518231	B2	20030211		
PRAI	GB 2000-30877	A	20001218		
	WO 2001-EP13196	W	20011113		
AB	The invention relates to catalytically <b>bleaching</b> substrates, esp. laundry fabrics, with atm. oxygen or air in the presence to an air <b>bleaching</b> facilitator.				
ST	air <b>bleaching</b> agent catalyst				
IT	<b>Bleaching</b> agents				
	Oxidation catalysts				
	(enhancement of air <b>bleaching</b> catalysts)				
IT	16858-02-9D, iron complex		212697-49-9	260395-33-3	260395-37-7
	328564-06-3		329279-17-6		
	RL: CAT (Catalyst use); USES (Uses)				
	(enhancement of air <b>bleaching</b> catalysts)				
IT	<b>439153-63-6P</b>				
	RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)				
	(enhancement of air <b>bleaching</b> catalysts)				
IT	822-17-3, Sodium linoleate				
	RL: TEM (Technical or engineered material use); USES (Uses)				
	(enhancement of air <b>bleaching</b> catalysts)				
IT	1121-60-4, 2-Pyridinecarboxaldehyde 1830-54-2, Dimethyl acetonedicarboxylate 3731-51-9, 2-Pyridinemethanamine				
	RL: RCT (Reactant); RACT (Reactant or reagent)				
	(prepn. of air <b>bleaching</b> catalysts)				
IT	437985-06-3P <b>437985-15-4P</b>				
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP				

(Preparation); RACT (Reactant or reagent)  
(prepn. of air **bleaching** catalysts)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Procter & Gamble; WO 0060045 A 2000 HCAPLUS

(2) Unilever Plc; WO 0012667 A 2000 HCAPLUS

(3) Unilever Plc; WO 0116268 A 2001 HCAPLUS

(4) Unilever Plc; WO 0116271 A 2001 HCAPLUS

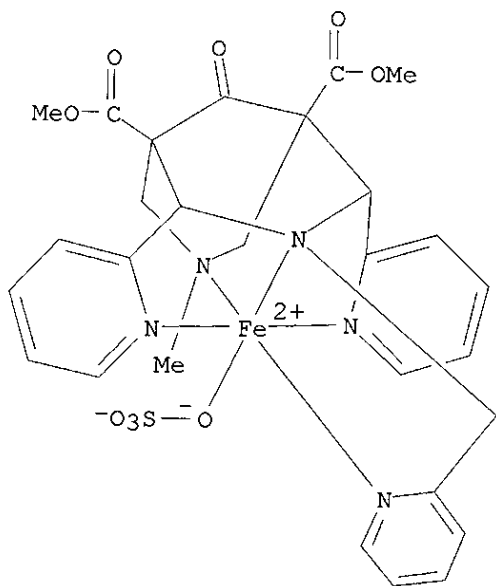
IT 439153-63-6P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)

(enhancement of air **bleaching** catalysts)

RN 439153-63-6 HCAPLUS

CN Iron, [rel-dimethyl (1R,2S,4R,5S)-7-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][sulfato(2-)-.kappa.O]-, (OC-6-53)-(9CI) (CA INDEX NAME)

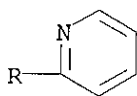
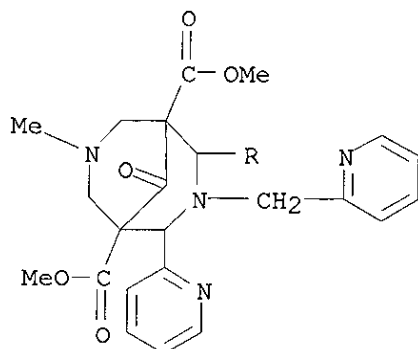


IT 437985-15-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
(Preparation); RACT (Reactant or reagent)  
(prepn. of air **bleaching** catalysts)

RN 437985-15-4 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-methyl-9-oxo-2,4-di-2-pyridinyl-3-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)

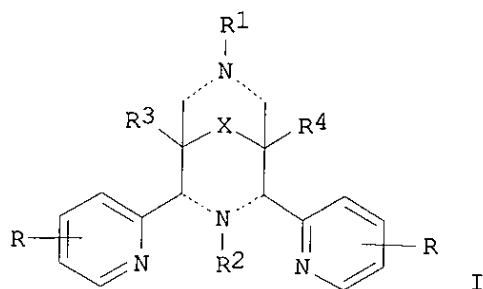


L15 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:466143 HCAPLUS  
 DN 137:48918  
 TI Ligand and complex for catalytically **bleaching** a substrate  
 IN Boerzel, Heidi; Comba, Peter; Hage, Ronald; Kerscher, Marion; Lienke, Joachim; Merz, Michael  
 PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited  
 SO PCT Int. Appl., 47 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C11D003-16  
 ICS C11D003-39; C07D471-08; C07D487-04; C07D487-08; C07D471-08;  
 C07D223-00; C07D221-00; C07D487-04; C07D209-00; C07D209-00;  
 C07D487-08; C07D223-00; C07D223-00; C07D487-08; C07D245-00;  
 C07D225-00  
 CC 46-6 (Surface Active Agents and Detergents)  
 FAN.CNT 1

*applicant*

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002048301	A1	20020620	WO 2001-EP13314	20011115
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002033187	A5	20020624	AU 2002-33187	20011115
US 2002149000	A1	20021017	US 2001-21884	20011214
PRAI GB 2000-30673	A	20001215		
WO 2001-EP13314	W	20011115		
OS MARPAT 137:48918				

GI



- AB Present invention relates to a **bleaching** compn. comprising: (a) a monomer ligand or transition metal catalyst thereof of a ligand having the formula (I); wherein R = H, F, Cl, Br, hydroxyl, C1-4 alkyl-O, NHCOH, NHCO C1-4 alkyl, NH<sub>2</sub>, NH C1-4 alkyl, and C1-4 alkyl; R1 and R2 = C1-4 alkyl, C6-10 aryl, and, a group contg. a heteroatom capable of coordinating to a transition metal, wherein at least one of R1 and R2 is the group contg. the heteroatom; R3 and R4 = H, C1-8 alkyl, C1-8 alkyl-O-C1-8 alkyl, C1-8 alkyl-O-C6-10 aryl, C6-10 aryl, C1-8 hydroxyalkyl, and (CH<sub>2</sub>)<sub>n</sub>C(O)OR<sub>5</sub> wherein R<sub>5</sub> = H, C1-4 alkyl, n = 0-4, and mixts. thereof; and, X = C=O, [C(R<sub>6</sub>)<sub>2</sub>]<sub>y</sub> wherein Y = 0-3, R<sub>6</sub> = H, hydroxyl, C1-4 alkoxy, C1-4 alkyl; and (b) the balance carriers and adjunct ingredient.
- ST ligand catalytically **bleaching** substrate
- IT Sulfonic acids, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (alkanesulfonic, salts; ligand and complex for catalytically **bleaching** a substrate)
- IT Sulfonic acids, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (alkanesulfonic, sodium salts; ligand and complex for catalytically **bleaching** a substrate)
- IT **Bleaching agents**  
 (ligand and complex for catalytically **bleaching** a substrate)
- IT 328564-06-3P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (ligand and complex for catalytically **bleaching** a substrate)
- IT 94543-37-0P 197524-22-4P, Fe(NCCH<sub>3</sub>)<sub>2</sub>(triflate)<sub>2</sub> 253304-60-8P  
 437985-06-3P 437985-12-1P 437985-15-4P  
 437985-19-8P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (ligand and complex for catalytically **bleaching** a substrate)
- IT 437985-22-3P 437985-26-7P 437985-30-3P  
 437985-33-6P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (ligand and complex for catalytically **bleaching** a substrate)
- IT 50-00-0, Formaldehyde, reactions 74-89-5, Methylamine, reactions 75-05-8, Acetonitrile, reactions 1121-60-4, 2-Pyridinecarboxaldehyde 1493-13-6, Trifluoromethanesulfonic acid 1830-54-2, Dimethyl acetonedicarboxylate 3731-51-9, 2-Picolylamine 7439-89-6, Iron,

reactions 7447-39-4, Copper(II) chloride, reactions 7720-78-7, Iron(II) sulfate 7758-94-3, Iron(II) chloride 13478-10-9, Iron(II) chloride tetrahydrate 13933-23-8 54765-14-9, 2-Pyridineacetaldehyde 223504-10-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
(ligand and complex for catalytically **bleaching** a substrate)

IT 64-17-5, Ethanol, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(ligand and complex for catalytically **bleaching** a substrate)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

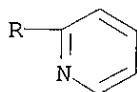
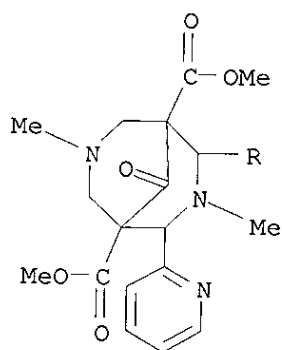
- (1) Borzel, H; CHEM EUR J 1999, V5(6), P1716 HCAPLUS
- (2) Haller, R; ARZNEIMITTEL FORSCH 1965, V15(11), P1327 HCAPLUS
- (3) Kuhl, U; ARCH PHARM 2000, V333(7), P226 HCAPLUS
- (4) Procter & Gamble; WO 0060045 A 2000 HCAPLUS

IT 253304-60-8P 437985-12-1P 437985-15-4P  
437985-19-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(ligand and complex for catalytically **bleaching** a substrate)

RN 253304-60-8 HCAPLUS

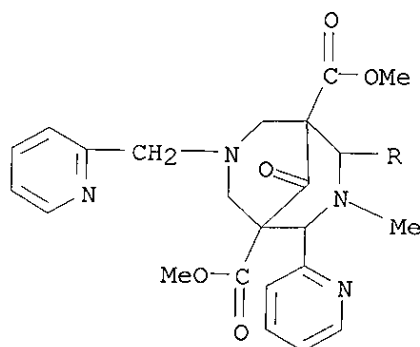
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester (9CI) (CA INDEX NAME)



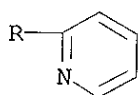
*claim 19*

RN 437985-12-1 HCAPLUS

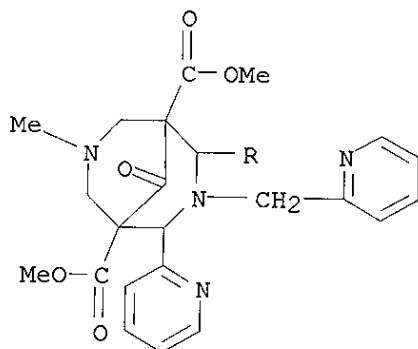
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-2,4-di-2-pyridinyl-7-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)



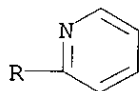
*Claim 9*



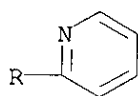
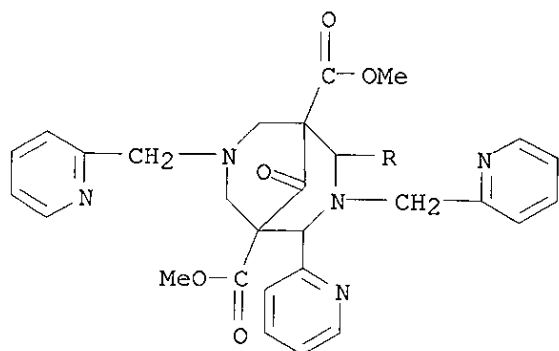
RN 437985-15-4 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-methyl-9-oxo-2,4-di-  
 2-pyridinyl-3-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)



*Claim 9*



RN 437985-19-8 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-oxo-2,4-di-2-  
 pyridinyl-3,7-bis(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX  
 NAME)

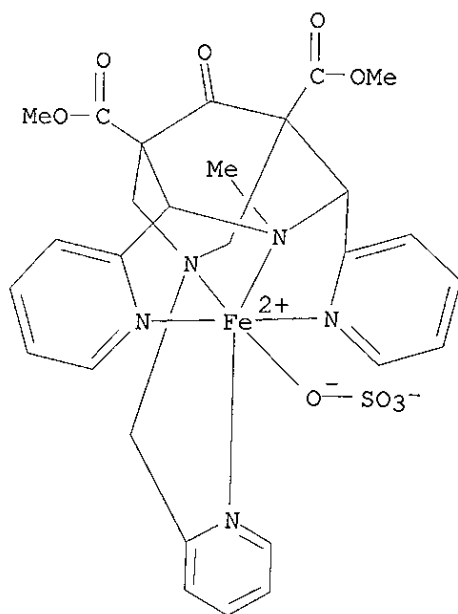


IT 437985-22-3P 437985-26-7P 437985-30-3P  
437985-33-6P

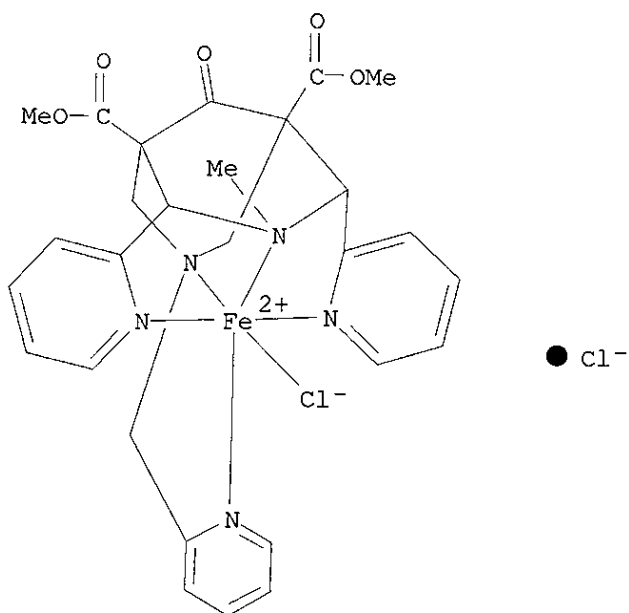
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(ligand and complex for catalytically bleaching a substrate)

RN 437985-22-3 HCAPLUS

CN Iron, [rel-(1R,2S,4R,5S)-dimethyl 3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-7-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][sulfato(2-)-.kappa.O]-, (OC-6-63)-(9CI) (CA INDEX NAME)



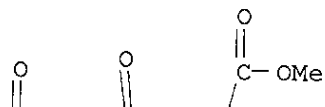
RN 437985-26-7 HCAPLUS  
 CN Iron(1+), chloro[rel-(1R,2S,4R,5S)-dimethyl 3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-7-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (OC-6-63)- (9CI) (CA INDEX NAME)



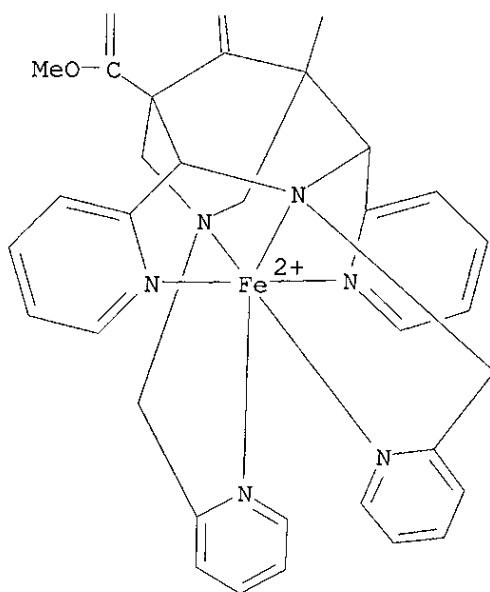
RN 437985-30-3 HCAPLUS  
 CN Iron(2+), [rel-dimethyl (1R,2S,4R,5S)-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-bis[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, dichloride, (OC-6-26)- (9CI) (CA INDEX NAME)



PAGE 1-A



PAGE 2-A

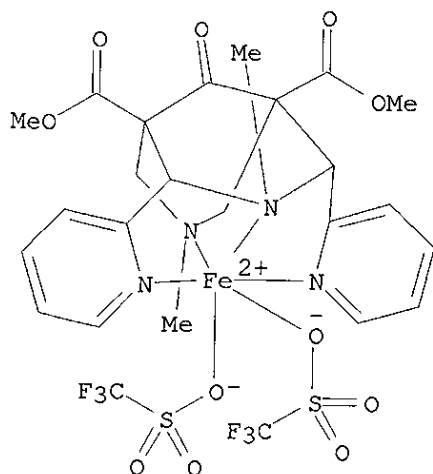


● 2 Cl<sup>-</sup>

RN 437985-33-6 HCAPLUS  
 CN Iron, [rel-(1R,2S,4R,5S)-dimethyl 3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-  
 .kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]bis(trifluoromethanesulfonato-.kappa.O)-, (OC-6-54)-

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

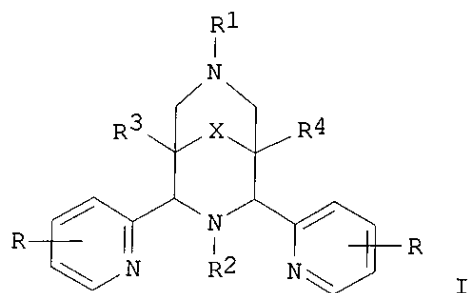
(9CI) (CA INDEX NAME)



L15 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2000:725740 HCAPLUS  
 DN 133:311159  
 TI Transition metal catalysts in **bleaching** agents for fabrics  
 IN Perkins, Christopher Mark  
 PA Procter & Gamble Co., USA  
 SO PCT Int. Appl., 51 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C11D003-395  
 ICS C11D003-16  
 CC 46-5 (Surface Active Agents and Detergents)  
 Section cross-reference(s): 67

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000060045	A1	20001012	WO 2000-US8690	20000330
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRAI US 1999-127426P	P	19990401		
OS MARPAT 133:311159				
GI				



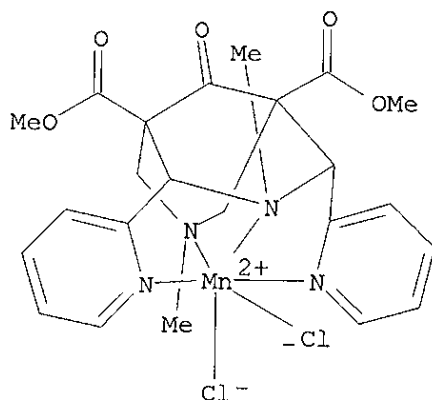
- AB A **bleaching** system comprises (a) .apprx.1 ppb transition metal catalyst comprising (i) a transition metal; and (ii) a ligand I, where R = H, OH, C1-4-alkyl, and mixts.; R1-2 = C1-4-alkyl, C6-C10 aryl, and mixts.; R3 and R4 = H, C1-8-alkyl, C1-C8 hydroxyalkyl, (CH2)xCO2R5; R5 = C1-4-alkyl, x = 0-4, and mixts.; X = carbonyl, C(R6)2, where R6 = R, (b) optionally a source of H2O2, and (c) the balance carriers and adjunct ingredients. An example **bleach** catalyst that was prepd. was 1,5-bis(hydroxymethylene)-3,7-dimethyl-2,4-bis(2-pyridyl)-3,7-diazabicyclo[3.3.1]nonan-9-ol manganese dichloride.
- ST transition metal **bleach** catalyst detergent; pyridyl diazabicyclononane ligand **bleach** catalyst
- IT Detergents  
(laundry; transition metal catalysts in **bleaching** agents for fabrics)
- IT **Bleaching** agents  
Oxidation catalysts  
(transition metal catalysts in **bleaching** agents for fabrics)
- IT Transition metal complexes  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(transition metal catalysts in **bleaching** agents for fabrics)
- IT 7722-84-1, Hydrogen peroxide, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**bleach** source; transition metal catalysts in **bleaching** agents for fabrics)
- IT 13446-34-9, Manganese dichloride tetrahydrate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in catalyst manuf.; transition metal catalysts in **bleaching** agents for fabrics)
- IT 253304-60-8 301826-49-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(ligand; transition metal catalysts in **bleaching** agents for fabrics)
- IT 219957-02-5P 301833-23-8P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(transition metal catalysts in **bleaching** agents for fabrics)
- RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
- (1) Collinson, S; WO 9839098 A 1998 HCAPLUS
- (2) Kuhling, D; US 3919102 A 1975 HCAPLUS
- (3) Unilever Plc; EP 0544519 A 1993 HCAPLUS
- IT 219957-02-5P 301833-23-8P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP

**(Preparation); USES (Uses)**

(transition metal catalysts in **bleaching** agents for fabrics)

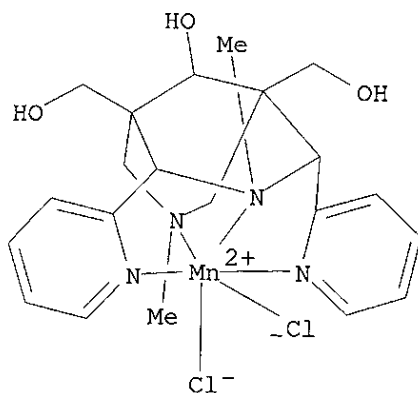
RN 219957-02-5 HCAPLUS

CN Manganese, dichloro[dimethyl (3-endo,7-endo)-3,7-dimethyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (OC-6-54)- (9CI) (CA INDEX NAME)



RN 301833-23-8 HCAPLUS

CN Manganese, dichloro[9-hydroxy-3,7-dimethyl-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dimethanol-.kappa.N3,.kappa.N7]-, stereoisomer (9CI) (CA INDEX NAME)

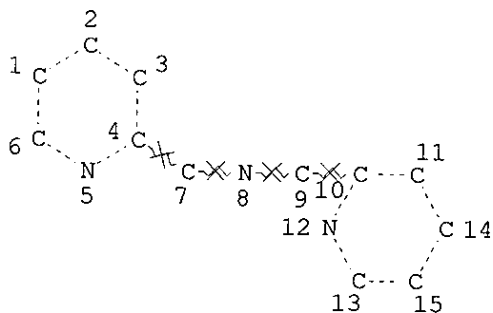


=> D QUE

L3

STR

*Remaining 22CA reference  
on preparation  
of the compounds  
no utility  
specified*



NODE ATTRIBUTES:

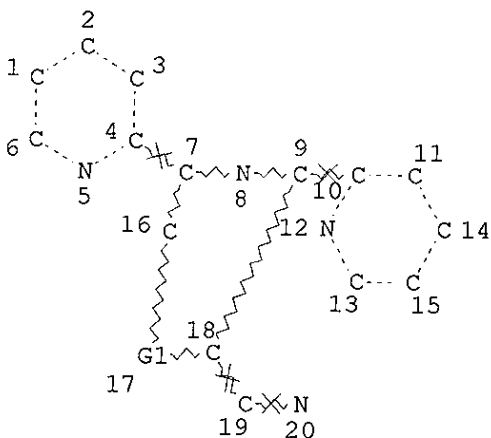
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DEFAULT ECLEVEL IS LIMITED

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RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L5 20763 SEA FILE=REGISTRY SSS FUL L3  
L8 STR



REP G1=(0-3) C

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DEFAULT MLEVEL IS ATOM  
MLEVEL IS CLASS AT 16 18  
DEFAULT ECLEVEL IS LIMITED  
ECOUNT IS UNLIMITED AT 16 18

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 20

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 L14 26 SEA FILE=HCAPLUS ABB=ON L13(L) (PREP OR IMF OR SPN)/RL  
 L15 4 SEA FILE=HCAPLUS ABB=ON L14 AND BLEACH?  
 L24 22 SEA FILE=HCAPLUS ABB=ON L14 NOT L15

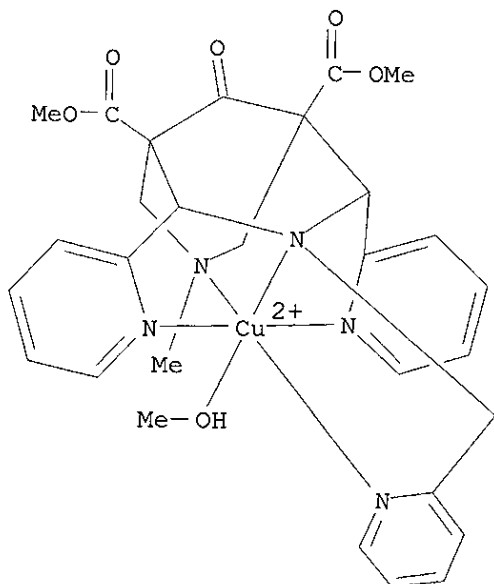
=> SEL HIT RN 1-22  
 E1 THROUGH E143 ASSIGNED

=> D BIB ABS HITSTR 1-22

L24 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2003:405393 HCAPLUS  
 DN 139:206563  
 TI Catalytic aziridination of styrene with copper complexes of substituted  
 3,7-diazabicyclo[3.3.1]nonanones  
 AU Comba, Peter; Merz, Michael; Pritzkow, Hans  
 CS Universitat Heidelberg, Anorganisch-Chemisches Institut, Im Neuenheimer  
 Feld 270, Heidelberg, 69120, Germany  
 SO European Journal of Inorganic Chemistry (2003), (9), 1711-1718  
 CODEN: EJICFO; ISSN: 1434-1948  
 PB Wiley-VCH Verlag GmbH & Co. KGaA  
 DT Journal  
 LA English  
 AB The Cu(II) complexes of five bispidine-type ligands {3,7-  
 diazabicyclo[3.3.1]nonanone; three tetradentate ligands with 2-pyridyl  
 (L1), 6-methyl-2-pyridyl (L2) or 2-imidazolyl-3-Me (L3) substituents in  
 2,4-positions; two pentadentate derivs. of L1 with an addnl.  
 2-methylpyridine substituent at N3 (L4) or N7 (L5)} have, with one  
 co-ligand (Cl-), a ligand-enforced square pyramidal (L1,2,3) or octahedral  
 (L4,5) geometry. The main structural properties of three of the five  
 [Cu(L)(Cl)]+ complexes (L1,2,3) are very similar, with Cu-N3 < Cu-N7 and  
 Cu-Cl .apprx. 2.25 .ANG. (trans to N3); with L2 Cu-N3 .apprx. Cu-N7  
 and Cu-Cl = 2.22 .ANG. (trans to N7); with L5 Cu-N3 < Cu-N7 and Cu-Cl =  
 2.72 .ANG. (trans to N7). These structural patterns lead to considerable  
 differences in ligand field and electrochem. properties (range of  
 E.degree. of .apprx.500mV), and the reactivities of the Cu(II) complexes  
 as aziridination catalysts (styrene, PhINTs, MeCN) are strikingly  
 different. While the complex with L2 is very efficient, the activities of  
 those with L1 and L3 are reduced to .apprx.50% and 30%, resp., and those  
 with L4 and L5 are inactive. The fact that the max. TON (max. turnover  
 no.) of CuIIL2 (19) is much smaller than the max. TON of CuIIL2 (47)  
 suggests that in the active form the catalysts are in the CuI oxidn.  
 state, and that the differences in redn. potentials are of major  
 importance for catalysis. The result that CuL4,5 have no activity in the  
 CuII state and only a small activity in the reduced form indicates that,  
 apart from the redn. potentials, steric effects might also be of  
 importance.  
 IT 583024-96-8P 583024-98-0P 583025-02-9P  
 583026-12-4P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PNU (Preparation, unclassified); PRP (Properties); **PREP**  
 (Preparation); PROC (Process)  
 (formation and cyclic voltammetry of)  
 RN 583024-96-8 HCAPLUS  
 CN INDEX NAME NOT YET ASSIGNED

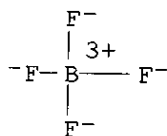
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CRN 583024-95-7  
CMF C29 H33 Cu N5 O6  
CCI CCS



CM 2

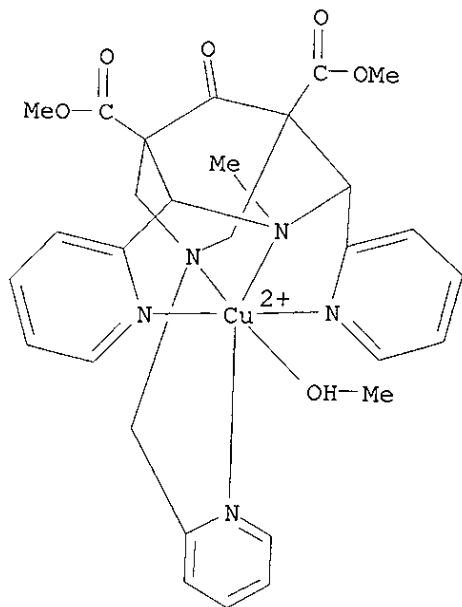
CRN 14874-70-5  
CMF B F4  
CCI CCS



RN 583024-98-0 HCAPLUS  
CN INDEX NAME NOT YET ASSIGNED

CM 1

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CCI CCS

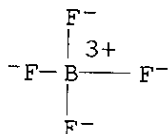


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CRN 14874-70-5

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CCI CCS

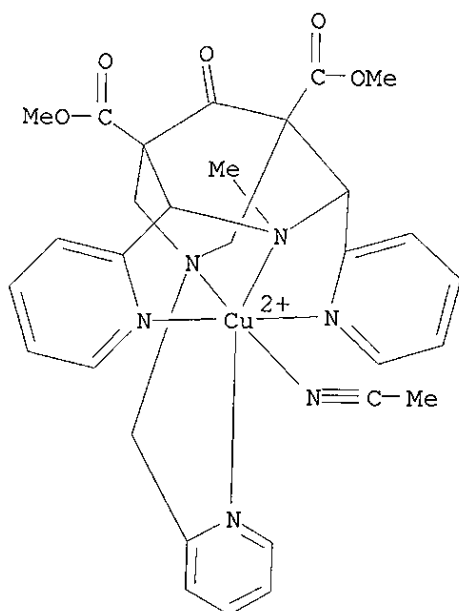


RN 583025-02-9 HCAPLUS  
CN INDEX NAME NOT YET ASSIGNED

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CCI CCS



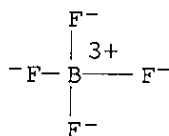


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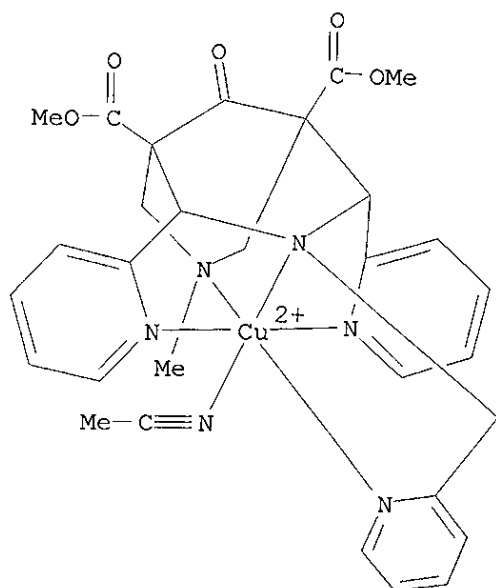
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CN INDEX NAME NOT YET ASSIGNED

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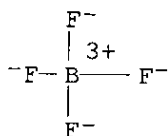


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



IT 583024-88-8P 583024-91-3P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)

(prepn. and aziridination catalyst for styrene and cyclic voltammetry)

RN 583024-88-8 HCAPLUS

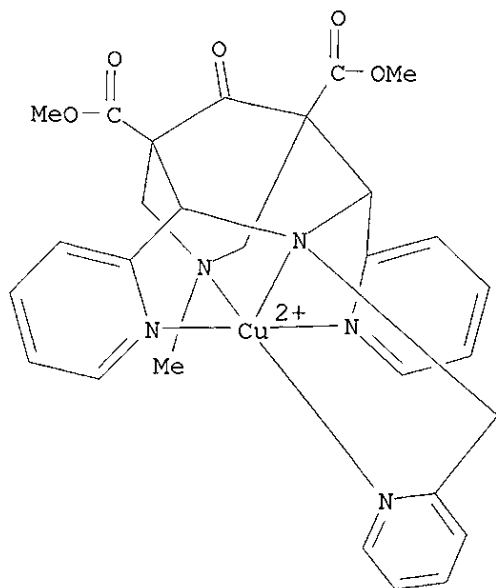
CN INDEX NAME NOT YET ASSIGNED

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CRN 583024-87-7

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CCI CCS

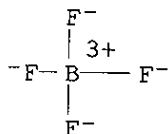


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



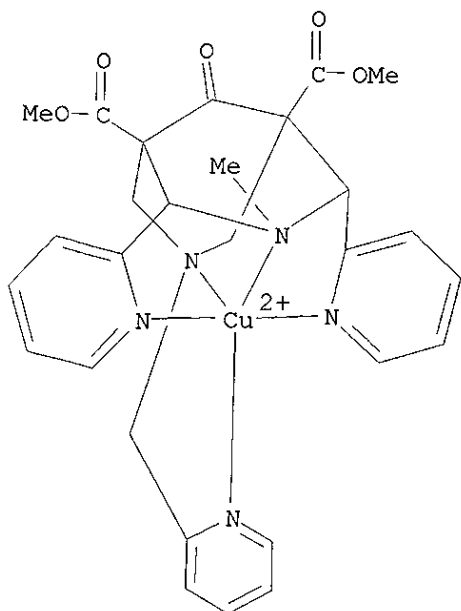
RN 583024-91-3 HCAPLUS  
CN INDEX NAME NOT YET ASSIGNED

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CRN 583024-90-2

CMF C28 H29 Cu N5 O5

CCI CCS

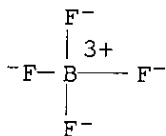


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



IT 437985-12-1P 437985-15-4P

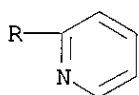
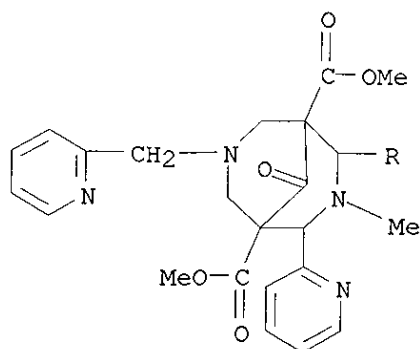
RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

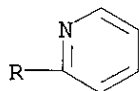
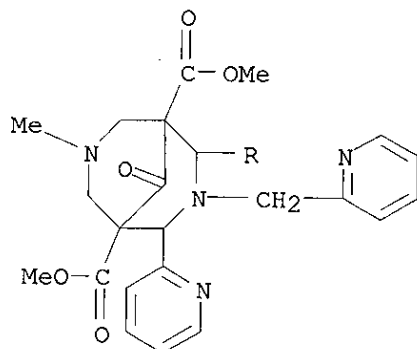
(prepn. and complexation with copper)

RN 437985-12-1 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-2,4-di-  
2-pyridinyl-7-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)



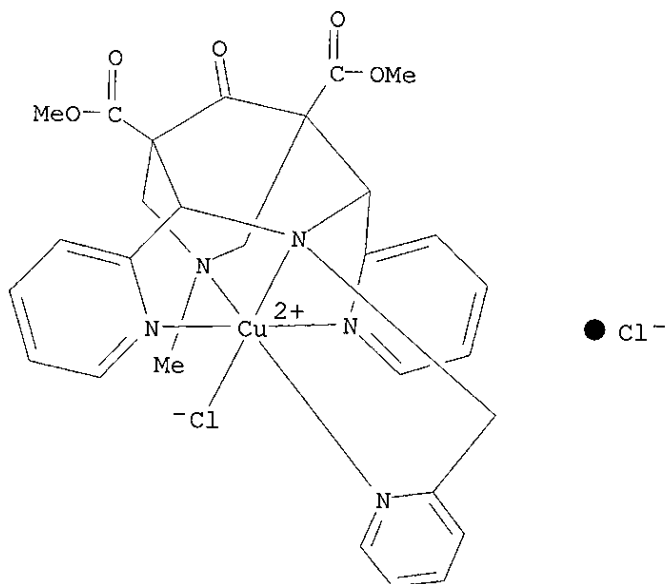
RN 437985-15-4 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-methyl-9-oxo-2,4-di-  
 2-pyridinyl-3-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)



IT **583025-10-9P**  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PRP (Properties); **SPN (Synthetic preparation)**;  
**PREP (Preparation)**; PROC (Process)  
 (prepn. and crystal structure of)  
 RN 583025-10-9 HCAPLUS  
 CN INDEX NAME NOT YET ASSIGNED

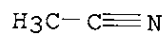
CM 1

CRN 583024-86-6  
CMF C28 H29 Cl Cu N5 O5 . Cl  
CCI CCS



CM 2

CRN 75-05-8  
CMF C2 H3 N



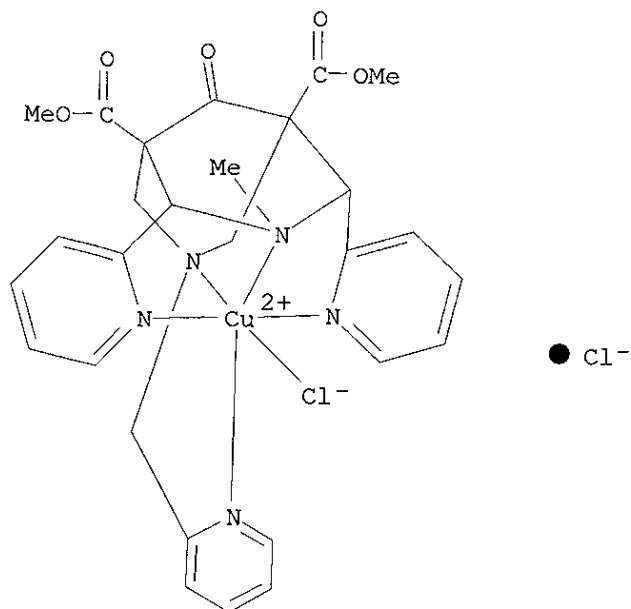
IT 583024-89-9P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(prepn. and crystal structure of and cyclic voltammetry)

RN 583024-89-9 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



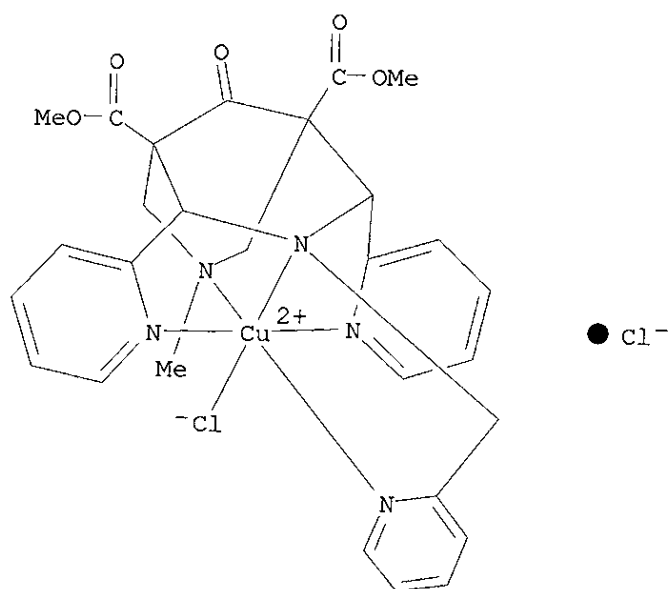
IT 583024-86-6P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); **SPN (Synthetic preparation);**

**PREP (Preparation);** PROC (Process)  
(prepn. and cyclic voltammetry)

RN 583024-86-6 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD

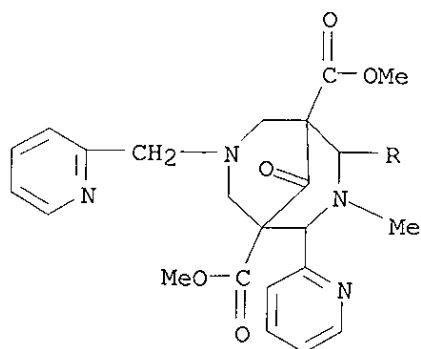
KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

## ALL CITATIONS AVAILABLE IN THE RE FORMAT

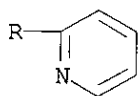
\* Priority

L24 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:813456 HCAPLUS  
 DN 138:82433  
 TI Iron coordination chemistry with tetra-, penta- and hexadentate  
 bispidine-type ligands  
 AU Borzel, Heidi; Comba, Peter; Hagen, Karl S.; Lampeka, Yaroslav D.; Lienke,  
 Achim; Linti, Gerald; Merz, Michael; Pritzkow, Hans; Tsybal, Lyudmyla V.  
 CS Anorganisch-Chemisches Institut, Universitat Heidelberg, Heidelberg,  
 D-69120, Germany  
 SO Inorganica Chimica Acta (2002), 337, 407-419  
 CODEN: ICHAA3; ISSN: 0020-1693  
 PB Elsevier Science B.V.  
 DT Journal  
 LA English  
 OS CASREACT 138:82433  
 AB Described is the synthesis of tetra-, penta- and hexadentate bispidine  
 ligands with two tertiary amine and two, three or four addnl. donors  
 (pyridine, phenolate or alcoholate; bispidine = 3,7-  
 diazabicyclo[3.3.1]nonanone, coordinating substituents at positions 2,4;  
 2,4,7; 2,3,4; 2,3,4,7) and of their hexacoordinate Fe(II) complexes.  
 Crystal structural analyses reveal that all complexes are six-coordinate,  
 with one or two co-ligands, and all structures with the tetradentate  
 bispidine ligand are asym. with respect to the two tertiary amine donors,  
 with short Fe-N1 and long Fe-N2 bonds (N1: position 3, N2: position 7).  
 This is the same structural type as found for the Jahn-Teller labile  
 Cu(II) compds., the Mn(II) and Cr(III) complexes but different from Cu(I),  
 Zn(II) and some Co(II) complexes with M-N1 .gtoreq. M-N2. Addnl. donors  
 at N2 modify the structures, but do not lead to a change to the other  
 structural type; addnl. donors at N1 lead to structures with M-N1 approx.  
 M-N2. Soln. studies (NMR, UV-visible, electrochem., magnetism) indicate  
 that the co-ligands may be substituted by solvent, with the donors trans  
 to N2 being more labile than those trans to N1, but the over-all  
 structural properties in soln. are similar to those in the solid state.  
 The complexes are stable towards oxidn., all except one have high spin  
 electronic configuration. The oxidn. potentials strongly depend on the  
 two co-ligands.  
 IT 437985-12-1P 437985-15-4P 437985-19-8P  
 479671-33-5P 479671-34-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (prepn. and complexation with copper)  
 RN 437985-12-1 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-2,4-di-  
 2-pyridinyl-7-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)

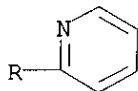
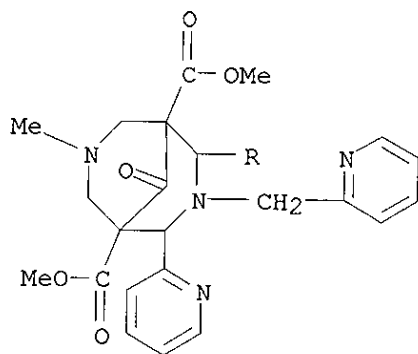




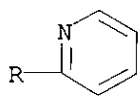
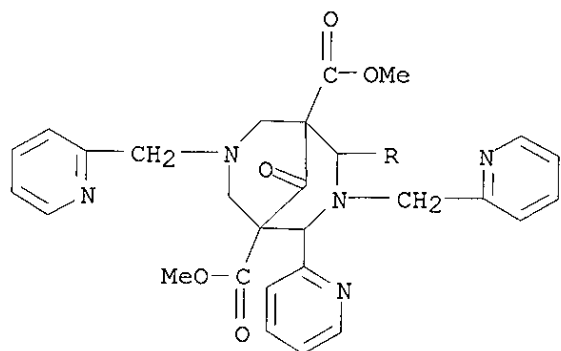
*claim 19*



RN 437985-15-4 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-methyl-9-oxo-2,4-di-  
 2-pyridinyl-3-(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX NAME)

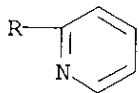
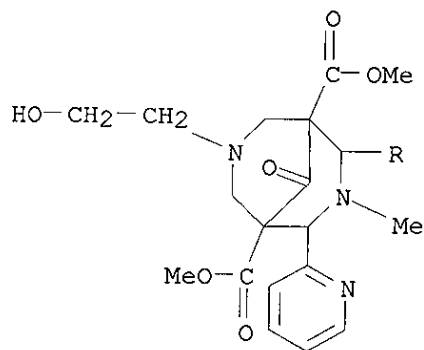


RN 437985-19-8 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-oxo-2,4-di-2-  
 pyridinyl-3,7-bis(2-pyridinylmethyl)-, dimethyl ester (9CI) (CA INDEX  
 NAME)



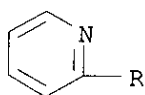
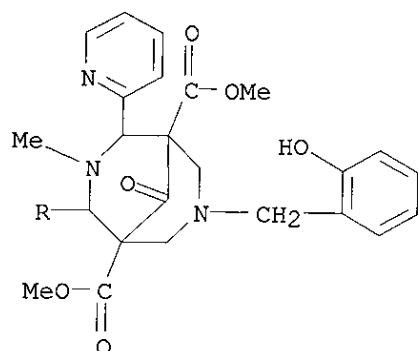
RN 479671-33-5 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-(2-hydroxyethyl)-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester (9CI) (CA INDEX NAME)



RN 479671-34-6 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-[(2-hydroxyphenyl)methyl]-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester (9CI) (CA INDEX NAME)



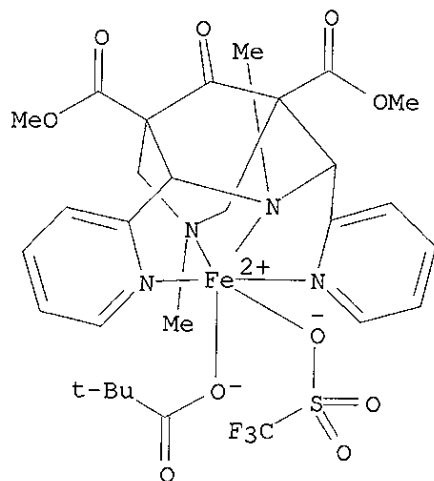
IT 479671-27-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and crystal structure)

RN 479671-27-7 HCAPLUS

CN Iron, [rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7] (2,2-dimethylpropanoato-.kappa.O) (trifluoromethanesulfonate-.kappa.O)-, (OC-6-65)- (9CI) (CA INDEX NAME)



IT 437985-22-3P 479671-37-9P 479671-39-1P

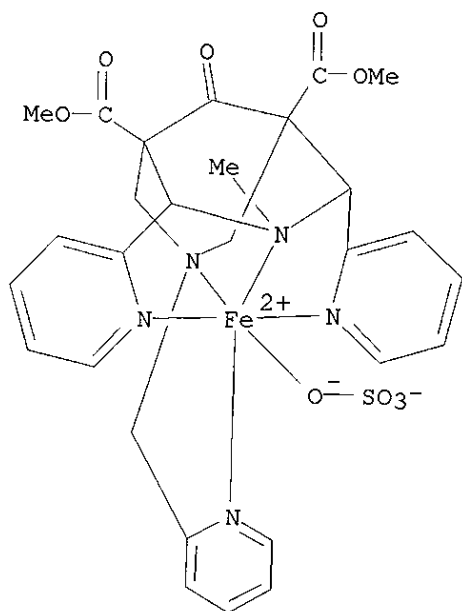
480435-08-3P 480435-09-4P 480435-10-7P

480435-36-7P 480436-82-6P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and crystal structure of)

RN 437985-22-3 HCAPLUS  
 CN Iron, [rel-(1R,2S,4R,5S)-dimethyl 3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-7-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][sulfato(2-)-.kappa.O]-, (OC-6-63)-(9CI) (CA INDEX NAME)



RN 479671-37-9 HCAPLUS  
 CN Iron(3+), triaqua[.mu.-[rel-tetramethyl (1R,1'R,2S,2'S,4R,4'R,5S,5'S)-3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]](trifluoromethanesulfonato-.kappa.O)di-, stereoisomer, salt with trifluoromethanesulfonic acid (1:3) (9CI) (CA INDEX NAME)

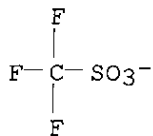
CM 1

CRN 479671-36-8  
 CMF C48 H58 F3 Fe2 N8 O16 S  
 CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 37181-39-8  
 CMF C F3 O3 S



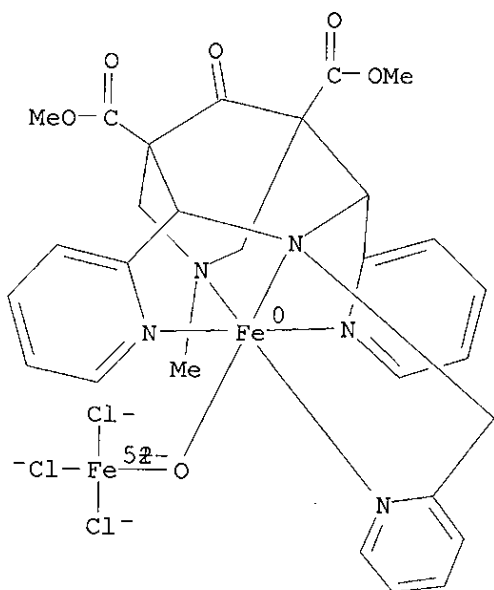
RN 479671-39-1 HCAPLUS  
 CN Iron, trichloro[dimethyl 7-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-.mu.-oxodi-, compd. with acetamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 479671-38-0

CMF C28 H29 Cl3 Fe2 N5 O6

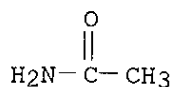
CCI CCS



CM 2

CRN 60-35-5

CMF C2 H5 N O

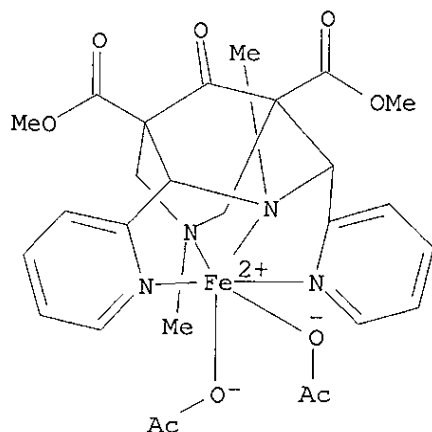


RN 480435-08-3 HCAPLUS  
 CN Iron, bis(acetato-.kappa.O)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (OC-6-54)-, compd. with methanol (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 479671-28-8

CMF C27 H32 Fe N4 O9  
CCI CCS



CM 2

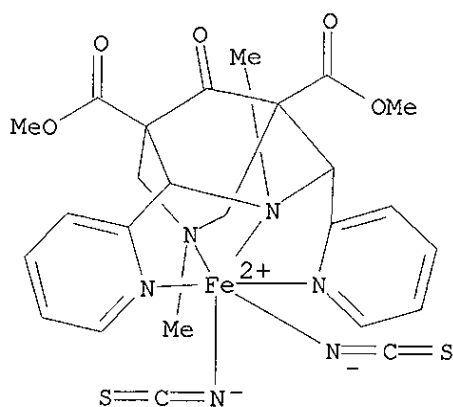
CRN 67-56-1  
CMF C H4 O

H<sub>3</sub>C-OH

RN 480435-09-4 HCAPLUS  
CN Iron, [rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-  
.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
.kappa.N3,.kappa.N7]bis(thiocyanato-.kappa.N)-, (OC-6-15)-, compd. with  
acetonitrile (1:2) (9CI) (CA INDEX NAME)

CM 1

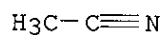
CRN 479671-26-6  
CMF C25 H26 Fe N6 O5 S2  
CCI CCS



CM 2

CRN 75-05-8

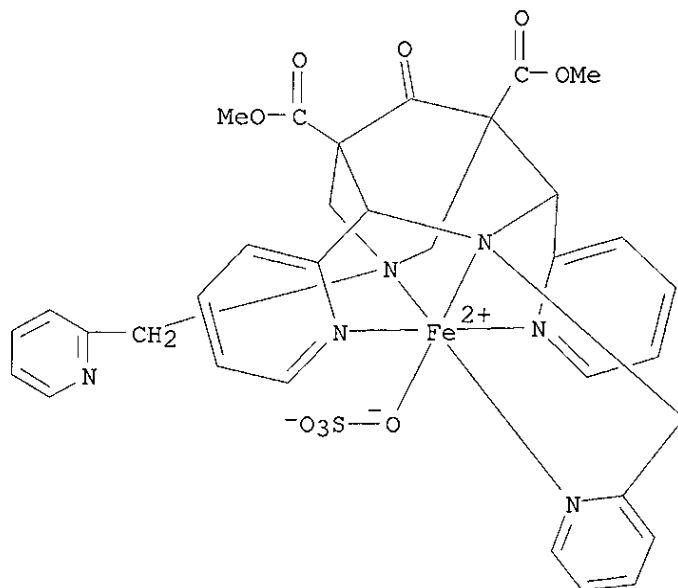
CMF C2 H3 N



RN 480435-10-7 HCAPLUS

CN Iron, [rel-dimethyl (1R,2S,4R,5S)-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-bis[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][sulfato(2-)-.kappa.O]-, monohydrate, (OC-6-53)- (9CI) (CA INDEX NAME)

PAGE 1-A

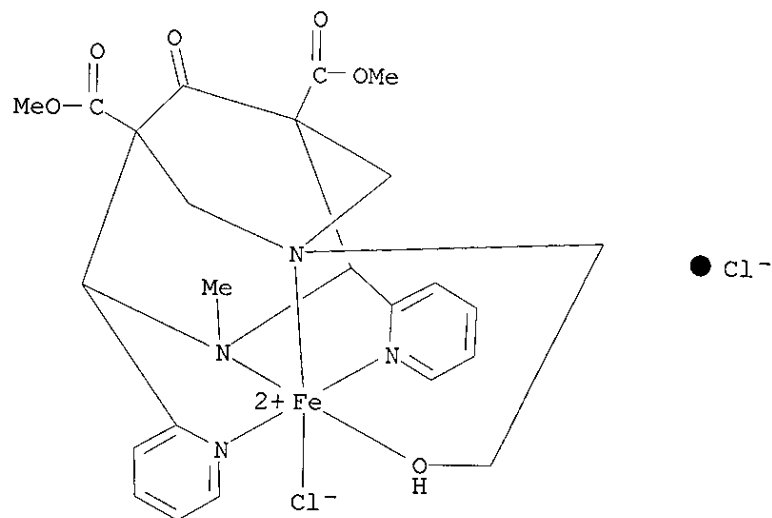


PAGE 2-A

H<sub>2</sub>O

RN 480435-36-7 HCAPLUS  
 CN Iron(1+), chloro[rel-dimethyl (1R,2S,4R,5S)-7-[2-(hydroxy-.kappa.O)ethyl]-3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, trihydrate, (OC-6-65)-(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

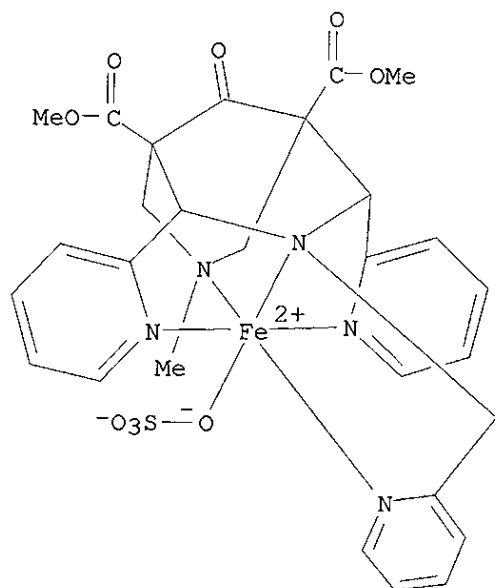
● 3 H<sub>2</sub>O

RN 480436-82-6 HCAPLUS  
 CN Iron, [rel-dimethyl (1R,2S,4R,5S)-7-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][sulfato(2-)-.kappa.O]-, (OC-6-53)-, compd. with methanol (1:2), monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 439153-63-6  
 CMF C28 H29 Fe N5 O9 S  
 CCI CCS





CM 2

CRN 67-56-1

CMF C H4 O

H<sub>3</sub>C-OH

IT 439153-63-6P 479671-29-9P 479671-32-4P

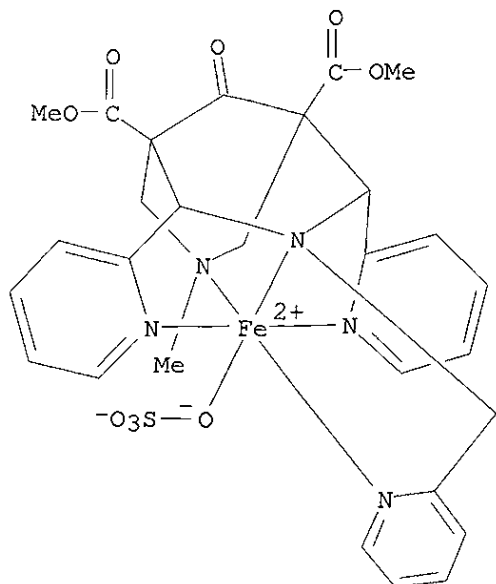
480436-81-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

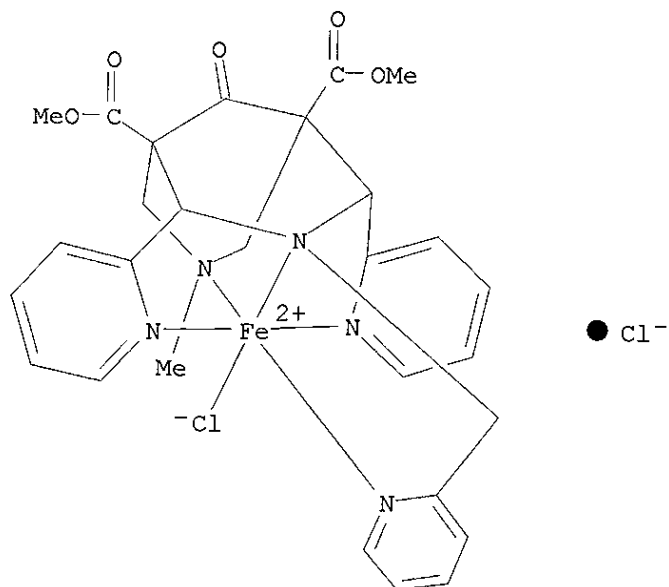
(prepn. and oxidn. potential)

RN 439153-63-6 HCAPLUS

CN Iron, [rel-dimethyl (1R,2S,4R,5S)-7-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][sulfato(2-)-.kappa.O]-, (OC-6-53)-(9CI) (CA INDEX NAME)

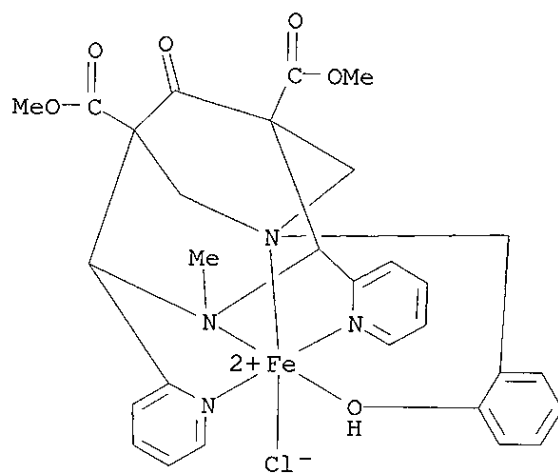


RN 479671-29-9 HCAPLUS  
 CN Iron(1+), chloro[rel-dimethyl (1R,2S,4R,5S)-7-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (OC-6-53)-(9CI) (CA INDEX NAME)



RN 479671-32-4 HCAPLUS  
 CN Iron(1+), chloro[rel-dimethyl (1R,2S,4R,5S)-7-[[2-(hydroxy-.kappa.O)phenyl]methyl]-3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-,

chloride, (OC-6-65)- (9CI) (CA INDEX NAME)



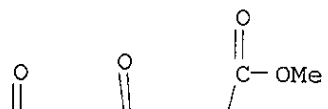
● Cl<sup>-</sup>

RN 480436-81-5 HCAPLUS  
 CN Iron(2+), [rel-dimethyl (1R,2S,4R,5S)-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-bis[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (OC-6-26)-, diperchlorate (9CI) (CA INDEX NAME)

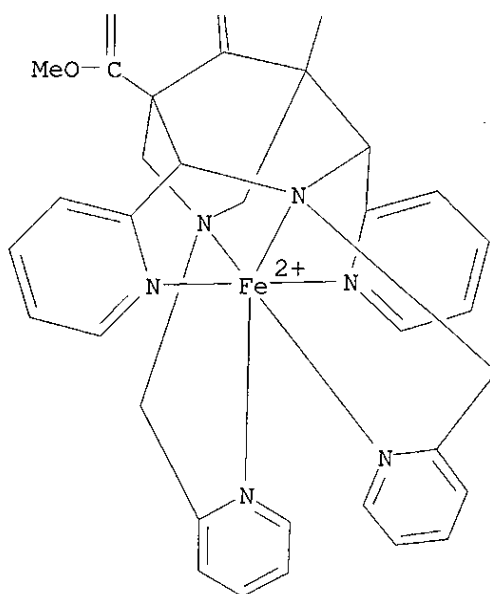
CM 1

CRN 480436-80-4  
 CMF C33 H32 Fe N6 O5  
 CCI CCS

PAGE 1-A



PAGE 2-A



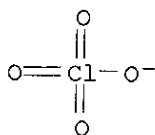
CM 2

CRN 14797-73-0

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

CMF Cl 04

*Claim 20  
Priority see previous page*



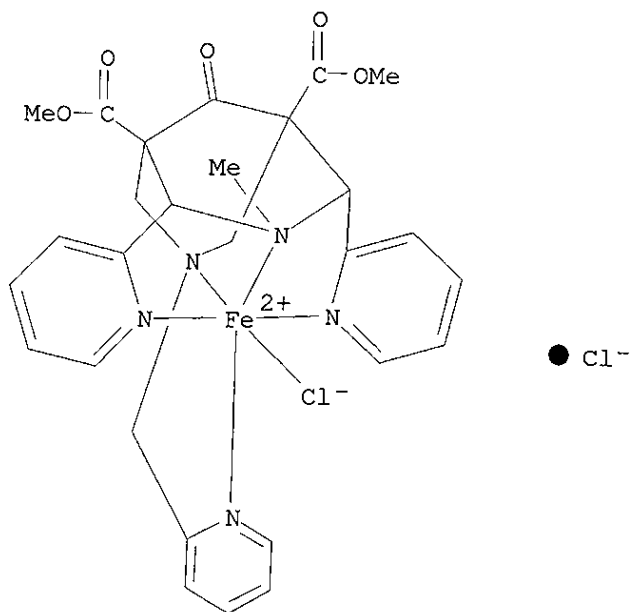
IT 437985-26-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and oxidn. potential and crystal structure)

RN 437985-26-7 HCAPLUS

CN Iron(1+), chloro[rel-(1R,2S,4R,5S)-dimethyl 3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-7-[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (OC-6-63)- (9CI) (CA INDEX NAME)



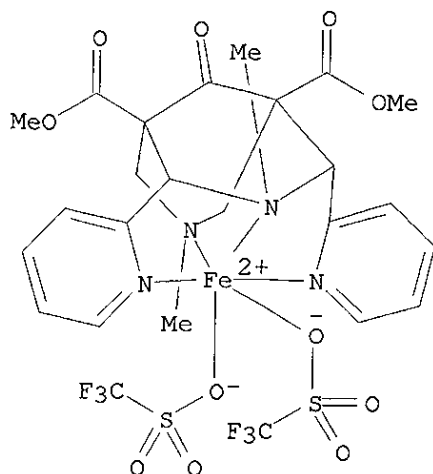
IT 437985-33-6P 479671-25-5P 479671-26-6P

479671-28-8P 479671-30-2P 479671-31-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 437985-33-6 HCAPLUS

CN Iron, [rel-(1R,2S,4R,5S)-dimethyl 3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]bis(trifluoromethanesulfonato-.kappa.O)-, (OC-6-54)- (9CI) (CA INDEX NAME)



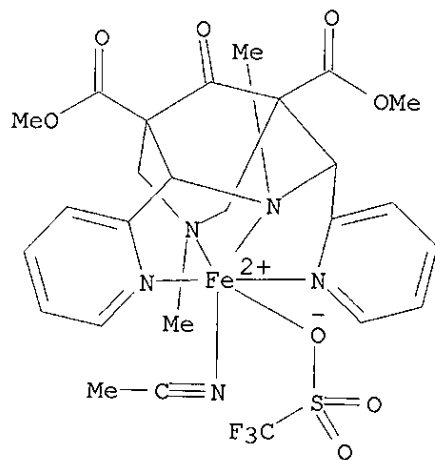
RN 479671-25-5 HCAPLUS  
 CN Iron(1+), (acetonitrile)[dimethyl 3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-  
 .kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7](trifluoromethanesulfonato-.kappa.O)-, salt with  
 trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 479671-24-4

CMF C26 H29 F3 Fe N5 O8 S

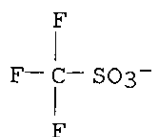
CCI CCS



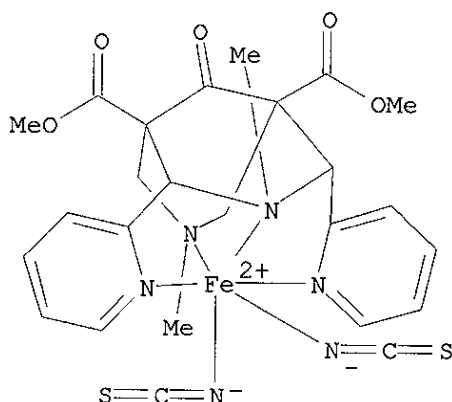
CM 2

CRN 37181-39-8

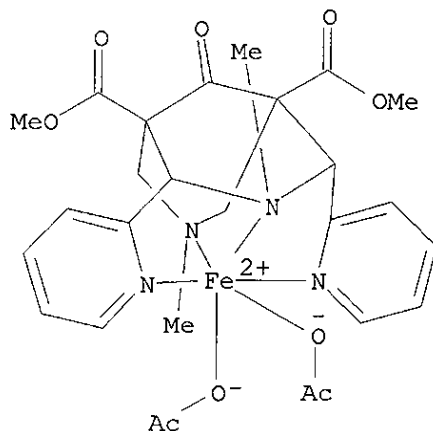
CMF C F3 O3 S



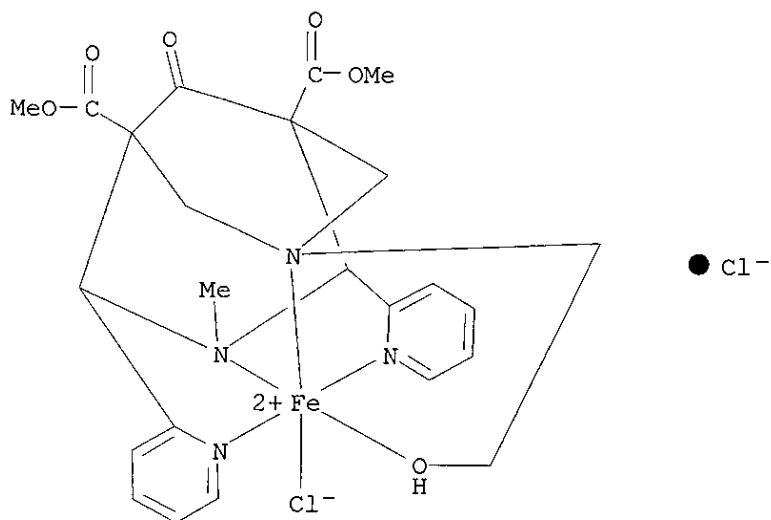
RN 479671-26-6 HCAPLUS  
 CN Iron, [rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]bis(thiocyanato-.kappa.N)-, (OC-6-15)- (9CI) (CA INDEX NAME)



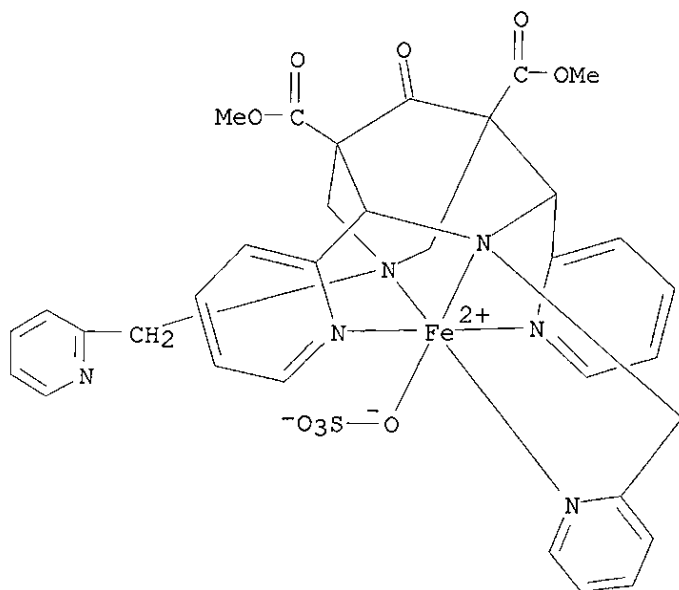
RN 479671-28-8 HCAPLUS  
 CN Iron, bis(acetato-.kappa.O)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (OC-6-54)- (9CI) (CA INDEX NAME)



RN 479671-30-2 HCAPLUS  
 CN Iron(1+), chloro[rel-dimethyl (1R,2S,4R,5S)-7-[2-(hydroxy-.kappa.O)ethyl]-3-methyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (OC-6-65)- (9CI) (CA INDEX NAME)



RN 479671-31-3 HCAPLUS  
 CN Iron, [rel-dimethyl (1R,2S,4R,5S)-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-bis[(2-pyridinyl-.kappa.N)methyl]-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][sulfato(2-)-.kappa.O]-, (OC-6-53)-(9CI) (CA INDEX NAME)



RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

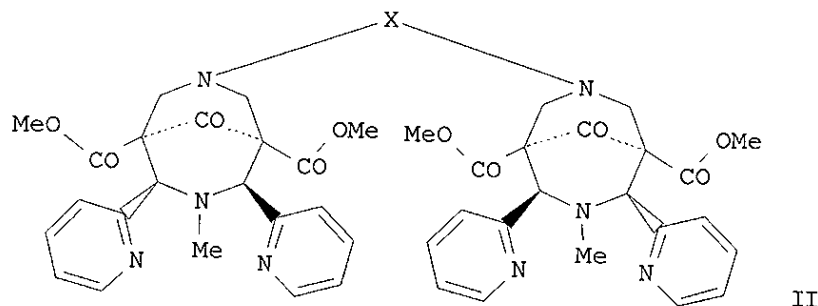
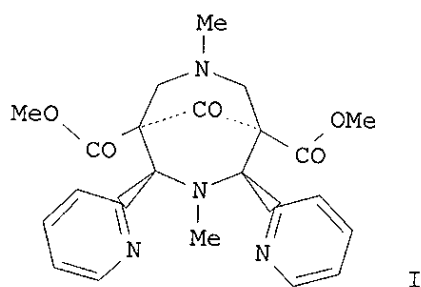
L24 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:729681 HCAPLUS  
 DN 137:392544

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290



*Priority*

TI Copper-Bispidine Coordination Chemistry: Syntheses, Structures, Solution Properties, and Oxygenation Reactivity  
 AU Boerzel, Heidi; Comba, Peter; Hagen, Karl S.; Kersch, Marion; Pritzkow, Hans; Schatz, Markus; Schindler, Siegfried; Walter, Olaf  
 CS Anorganisch-Chemisches Institut, Universitaet Heidelberg, Heidelberg, D-69120, Germany  
 SO Inorganic Chemistry (2002), 41(21), 5440-5452  
 CODEN: INOCAJ; ISSN: 0020-1669  
 PB American Chemical Society  
 DT Journal  
 LA English  
 GI



AB Cu(I) and Cu(II) complexes of two mononucleating (I) and four dinucleating tetradentate (II, X = C<sub>2</sub>H<sub>4</sub>, C<sub>3</sub>H<sub>6</sub>, m-xylyl) ligands with a bispidine backbone (R = 2,4-(2-pyridyl or 4-methyl-2-pyridyl) 3,7-diazabicyclo[3.3.1]nonanone) were prepd. and analyzed structurally, spectroscopically, and electrochem. The structures of the Cu chromophores are square pyramidal, except for two Cu(I) compds. which are four-coordinate with one noncoordinated pyridine. The other Cu(I) structures have the two pyridine donors, the co-ligand (NCCH<sub>3</sub>), and one of the tertiary amines (N3) in-plane with the Cu center and the other amine (N7) coordinated axially (Cu-N3 > Cu-N7, .apprx.2.25 .ANG. vs. 2.20 .ANG.). The Cu(II) compds. with pyridine donors have a similar structure, but the axial amine has a weaker bond to the Cu(II) center (Cu-N3 < Cu-N7, .apprx.2.03 .ANG. vs. 2.30 .ANG.). The structures with methylated pyridine donors are also square pyramidal with the co-ligands (Cl- or NCCH<sub>3</sub>) in-plane. With NCCH<sub>3</sub> the same structural type as for the other

Cu(II) complexes is obsd., and with the bulkier Cl- the co-ligand is trans to N7, leading to a square pyramidal structure with the pyridine donors rotated out of the basal plane and only a small difference between axial and in-plane amines (2.15, 2.12 .ANG.). These structural differences, enforced by the rigid bispidine backbone, lead to large variations in spectroscopic and electrochem. properties and reactivities. Oxygenation of the Cu(I) complexes with pyridine-substituted bispidine ligands leads to relatively stable .mu.-peroxo-dicopper(II) complexes. with a preorganization of the dicopper chromophores, by linking the two donor sets. With a preorganization of the dicopper chromophores, by linking the two donor sets, these peroxo compds. are stable at room temp. for up to 1 h. The stabilization of the peroxo complexes is to a large extent attributed to the square pyramidal coordination geometry with the substrate bound in the basal plane, a structural motif enforced by the rigid bispidine backbone. The stabilities and structural properties also correlate with the spectroscopic (UV-visible and Raman) and electrochem. properties.

IT 232945-72-1P 233604-20-1P 264910-16-9P

264910-18-1P 264910-45-4P 475980-03-1P

475980-04-2P 475980-05-3P 475980-06-4P

475980-11-1P 475980-12-2P 475980-14-4P

475980-34-8P 476157-15-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn.)

RN 232945-72-1 HCAPLUS

CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
(1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-  
di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
.kappa.N3,.kappa.N7]]]di-, stereoisomer, salt with  
trifluoromethanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 232945-71-0

CMF C50 H56 Cu2 N10 O10

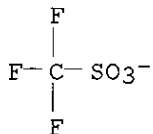
CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 37181-39-8

CMF C F3 O3 S



RN 233604-20-1 HCAPLUS

CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
(1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-  
di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-  
dicarboxylate]]]di-, stereoisomer, bis[tetrafluoroborate(1-)] (9CI) (CA  
INDEX NAME)

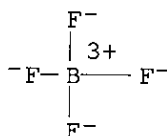
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CRN 232945-71-0  
CMF C50 H56 Cu2 N10 O10  
CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

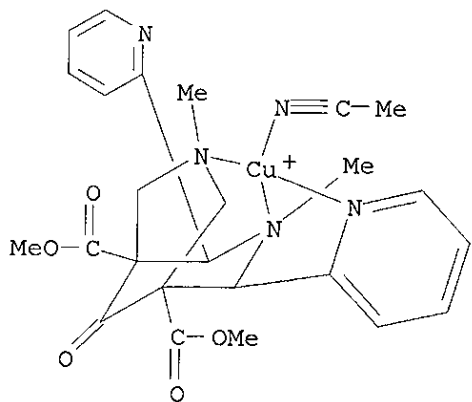
CRN 14874-70-5  
CMF B F4  
CCI CCS



RN 264910-16-9 HCAPLUS  
CN Copper(1+), (acetonitrile)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2-(2-pyridinyl-.kappa.N)-4-(2-pyridinyl)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (T-4)-, tetrafluoroborate(1-) (9CI)  
(CA INDEX NAME)

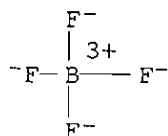
CM 1

CRN 264910-15-8  
CMF C25 H29 Cu N5 O5  
CCI CCS



CM 2

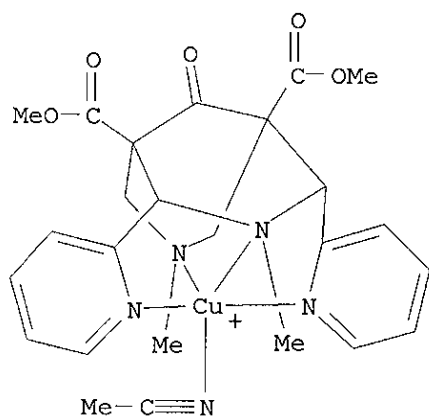
CRN 14874-70-5  
CMF B F4  
CCI CCS



RN 264910-18-1 HCAPLUS  
 CN Copper(1+), (acetonitrile)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (SP-5-54)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

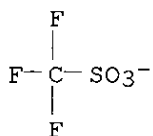
CM 1

CRN 232945-69-6  
 CMF C25 H29 Cu N5 O5  
 CCI CCS

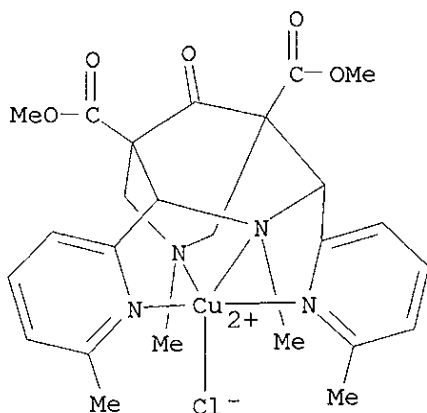


CM 2

CRN 37181-39-8  
 CMF C F3 O3 S



RN 264910-45-4 HCAPLUS  
 CN Copper(1+), chloro[rel-(1R,2S,4R,5S)-dimethyl 3,7-dimethyl-2,4-bis(6-methyl-2-pyridinyl-.kappa.N)-9-oxo-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (SP-5-45)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 475980-03-1 HCAPLUS  
 CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
 (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-[1,3-phenylenebis(methylene)]bis[7-  
 methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-  
 1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, stereoisomer,  
 bis[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

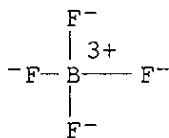
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CRN 475980-02-0  
 CMF C56 H60 Cu2 N10 O10  
 CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 14874-70-5  
 CMF B F4  
 CCI CCS

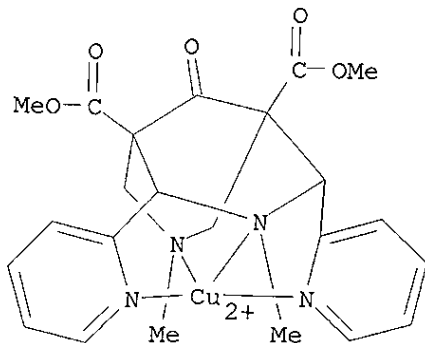


RN 475980-04-2 HCAPLUS  
 CN Copper(1+), [dimethyl rel-(1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-bis(2-  
 pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]-, (T-4)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

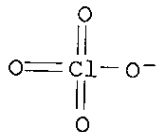
CRN 264910-36-3  
CMF C23 H26 Cu N4 O5  
CCI CCS

*claim 20*



CM 2

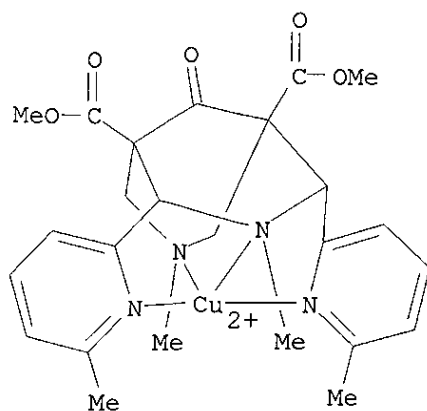
CRN 14797-73-0  
CMF Cl O4



RN 475980-05-3 HCAPLUS  
CN Copper(2+), [dimethyl rel-(1R,2S,4R,5S)-3,7-dimethyl-2,4-bis(6-methyl-2-pyridinyl-.kappa.N)-9-oxo-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (T-4)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

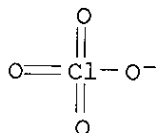
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CMF C25 H30 Cu N4 O5  
CCI CCS



CM 2

CRN 14797-73-0

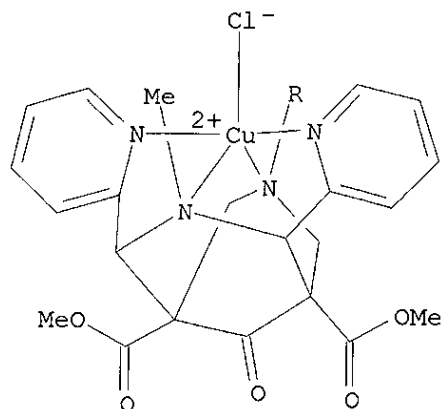
CMF Cl O4



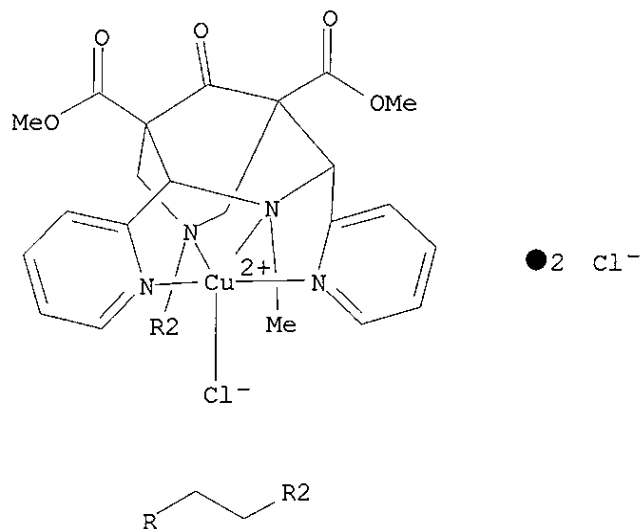
RN 475980-06-4 HCAPLUS

CN Copper(2+), dichloro[.mu.-[rel-tetramethyl (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, dichloride, stereoisomer (9CI) (CA INDEX NAME)

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RN 475980-11-1 HCAPLUS  
 CN Copper(4+), [.mu.-[rel-tetramethyl (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, stereoisomer, tetraerchlorate (9CI) (CA INDEX NAME)

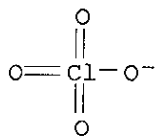
CM 1

CRN 475980-10-0  
 CMF C47 H52 Cu2 N8 O10  
 CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

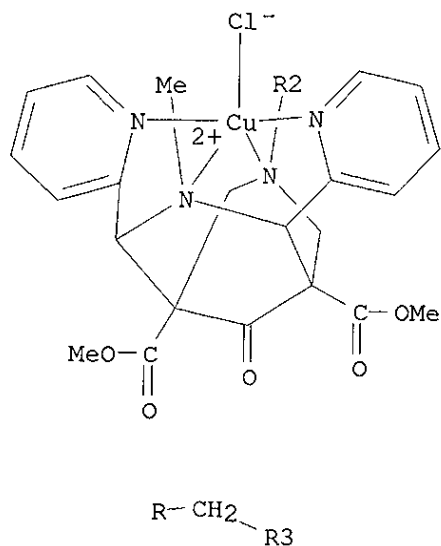
CRN 14797-73-0  
 CMF Cl O4



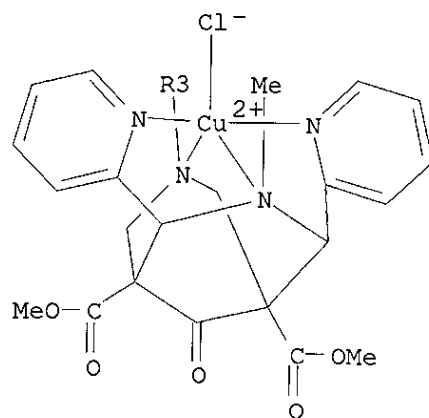
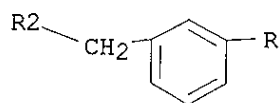
RN 475980-12-2 HCAPLUS  
 CN Copper(2+), dichloro[.mu.-[rel-tetramethyl (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,3-phenylenebis(methylene))bis[7-methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, dichloride, stereoisomer (9CI) (CA INDEX NAME)



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PAGE 2-A



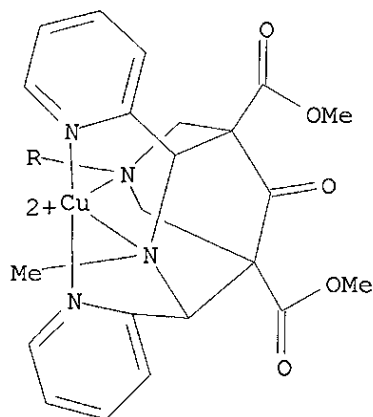
● 2 Cl<sup>-</sup>

RN 475980-14-4 HCAPLUS  
 CN Copper(4+), [.mu.-[rel-tetramethyl (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-[1,3-phenylenebis(methylene)]bis[7-methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, stereoisomer, tetrakis[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

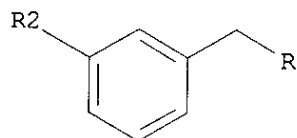
CM 1

CRN 475980-13-3  
CMF C52 H54 Cu2 N8 O10  
CCI CCS

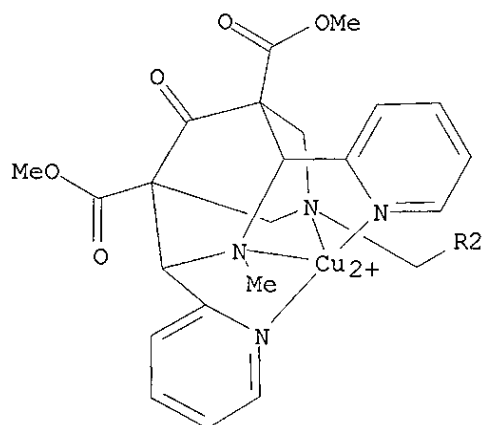
PAGE 1-A



PAGE 2-A



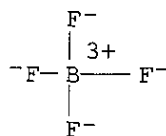
PAGE 3-A



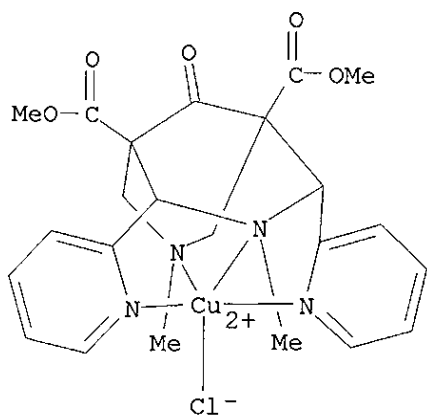
CM 2

CRN 14874-70-5

CMF B F4  
CCI CCS



RN 475980-34-8 HCAPLUS  
CN Copper(1+), chloro[rel-dimethyl (1R,5S,6R,8S)-3,7-dimethyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (SP-5-54)- (9CI) (CA INDEX NAME)



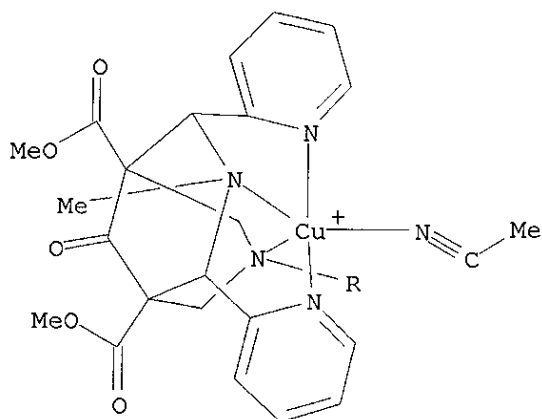
● Cl<sup>-</sup>

RN 476157-15-0 HCAPLUS  
CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, stereoisomer, salt with trifluoromethanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

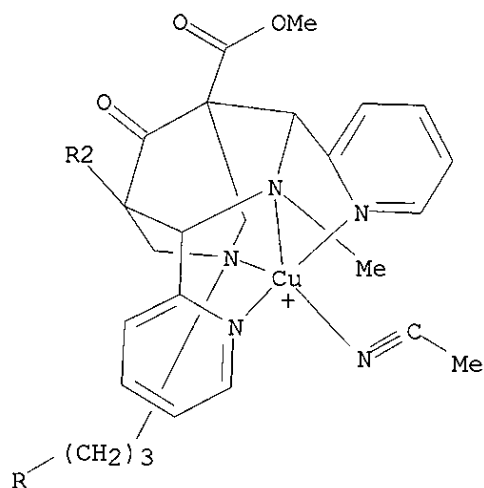
CM 1

CRN 475980-00-8  
CMF C51 H58 Cu2 N10 O10  
CCI CCS

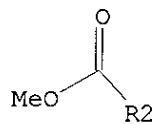
PAGE 1-A



PAGE 2-A



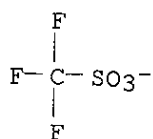
PAGE 3-A



CM 2

CRN 37181-39-8

CMF C F3 O3 S



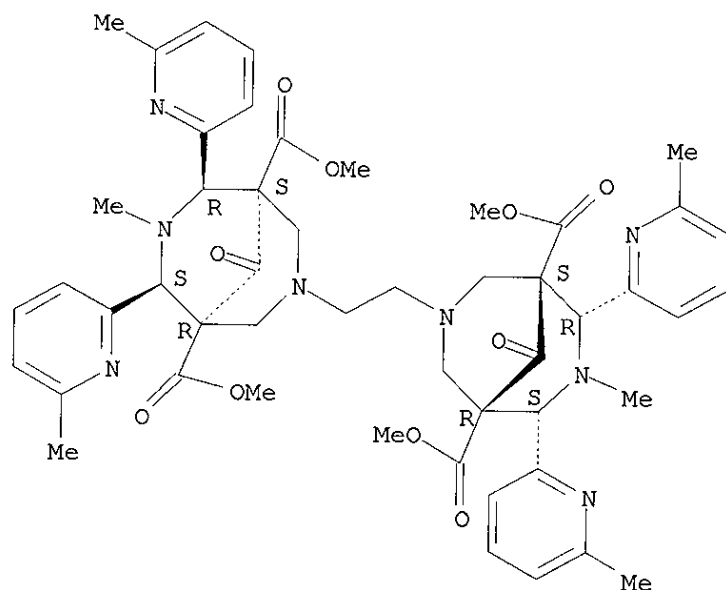
IT 475980-28-0P 475980-30-4P 475980-32-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (prepn. and complexation with copper)

RN 475980-28-0 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,3'-(1,2-ethanediyl)bis[7-methyl-6,8-bis(6-methyl-2-pyridinyl)-9-oxo-, tetramethyl ester, (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-rel- (9CI) (CA INDEX NAME)

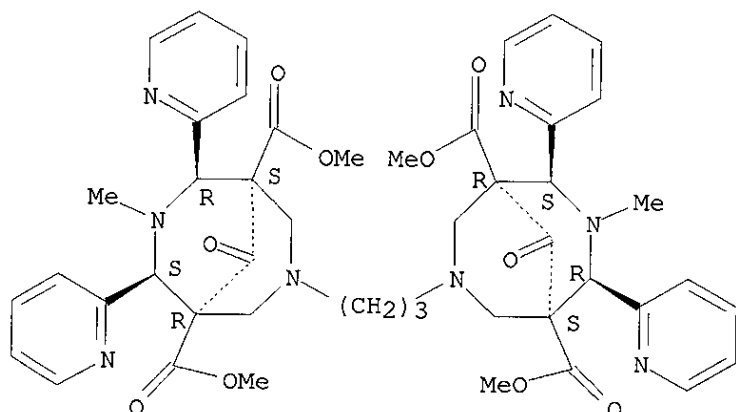
Relative stereochemistry.



RN 475980-30-4 HCAPLUS

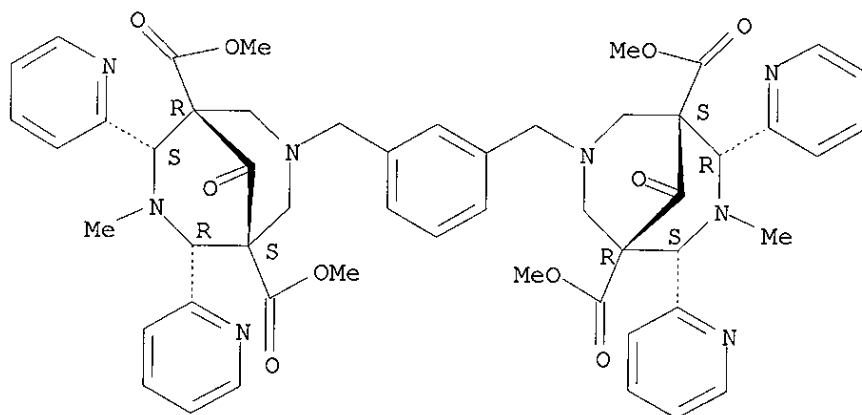
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-di-2-pyridinyl-, tetramethyl ester, (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 475980-32-6 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,3'-[3,1-phenylenebis(methylene)]bis[7-methyl-9-oxo-6,8-di-2-pyridinyl-, tetramethyl ester, (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-rel- (9CI) (CA INDEX NAME)

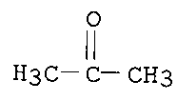
Relative stereochemistry.



IT 475979-99-8P 475980-01-9P 475980-08-6DP,  
 solvated 475980-09-7P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (prepn. and crystal structure)  
 RN 475979-99-8 HCAPLUS  
 CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
 (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6-(2-  
 pyridinyl-.kappa.N)-8-(2-pyridinyl)-3,7-diazabicyclo[3.3.1]nonane-1,5-  
 dicarboxylate-.kappa.N3,.kappa.N7]]]di-, stereoisomer,  
 bis[(OC-6-11)-hexafluoroantimonate(1-)], compd. with 2-propanone (5:4)  
 (9CI) (CA INDEX NAME)

CM 1

CRN 67-64-1

$$\text{CMF} \quad \text{C3} \quad \text{H6} \quad \text{O}$$


CM 2

CRN 475979-98-7

CMF C50 H56 Cu2 N10 O10 . 2 F6 Sb

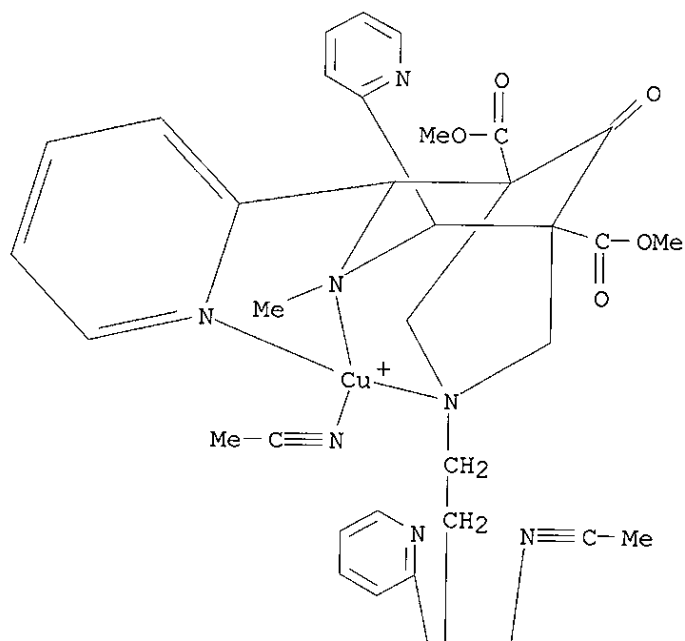
CM 3

CRN 475979-97-6

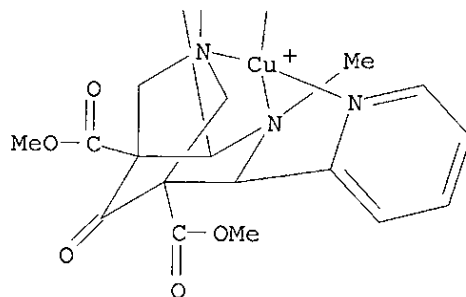
CMF C50 H56 Cu2 N10 O10

CCI CCS

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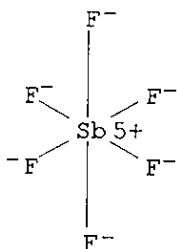


CM 4

CRN 17111-95-4

CMF F6 Sb

CCI CCS



RN 475980-01-9 HCAPLUS

CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
(1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-  
di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
.kappa.N3,.kappa.N7]]]di-, stereoisomer, bis[hexafluorophosphate(1-)]  
(9CI) (CA INDEX NAME)

CM 1

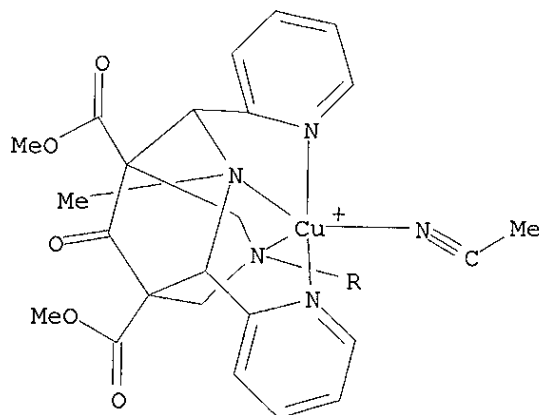
CRN 475980-00-8

CMF C51 H58 Cu2 N10 O10

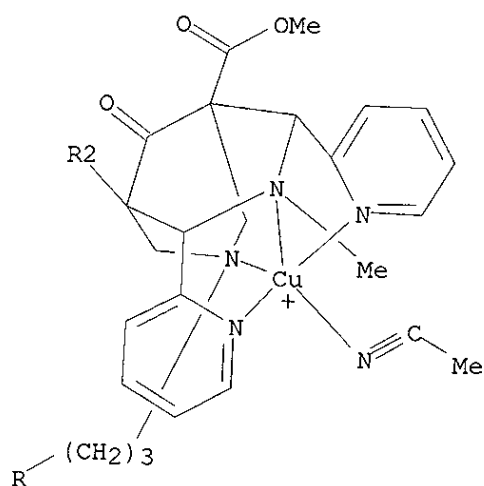
CCI CCS



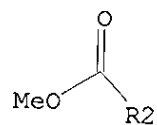
PAGE 1-A



PAGE 2-A



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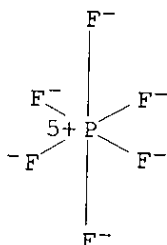


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 475980-08-6 HCAPLUS  
 CN Copper(4+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
 (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-  
 di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]]]di-, stereoisomer, tetraaperchlorate (9CI) (CA INDEX  
 NAME)

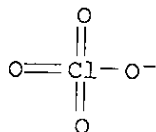
CM 1

CRN 475980-07-5  
 CMF C50 H56 Cu2 N10 O10  
 CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 14797-73-0  
 CMF Cl O4



RN 475980-09-7 HCAPLUS  
 CN Copper(2+), dichloro[.mu.-[rel-tetramethyl (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-  
 3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-  
 diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-,  
 dichloride, stereoisomer (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 476157-07-0P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PRP (Properties); SPN (Synthetic preparation);  
 PREP (Preparation); PROC (Process)  
 (prepn. and cyclic voltammetry)

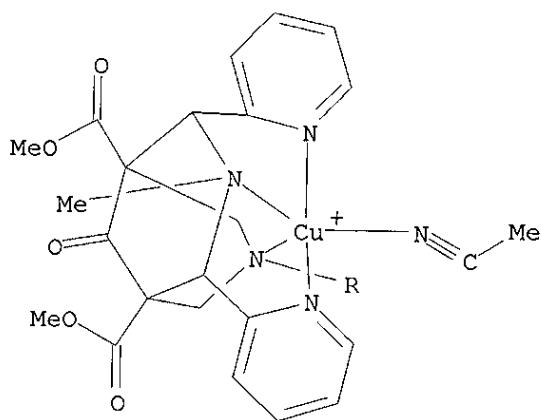
RN 476157-07-0 HCAPLUS

CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
 (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-  
 di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]]]di-, stereoisomer, bis[tetrafluoroborate(1-)] (9CI)  
 (CA INDEX NAME)

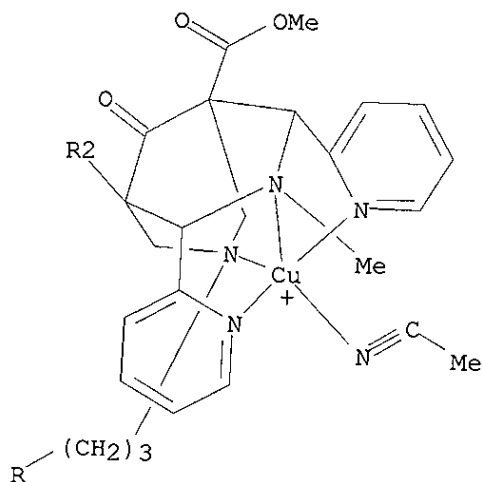
CM 1

CRN 475980-00-8  
CMF C51 H58 Cu2 N10 O10  
CCI CCS

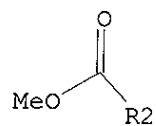
PAGE 1-A



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PAGE 3-A

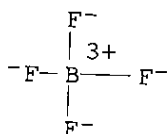


CM 2

CRN 14874-70-5

CMF B F4

CCI	CCS
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IT 232945-73-2P

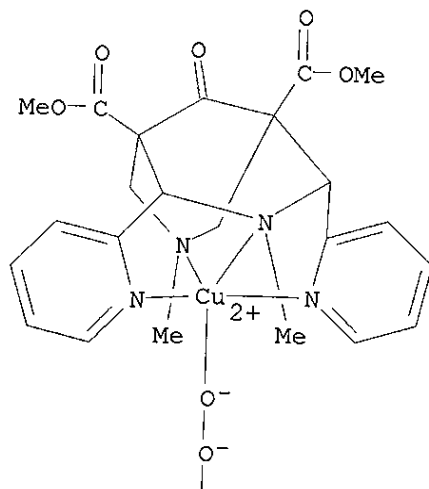
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn., peroxidn. kinetics and Raman spectra)  
945-73-2 HCAPLUS

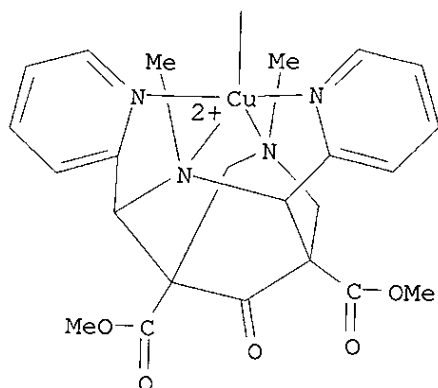
RN 232945-73-2 HCAPLUS

CN Copper(2+), bis[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7][.mu.-(peroxy-.kappa.O:.kappa.O')]di-, stereoisomer (9CI) (CA INDEX NAME)

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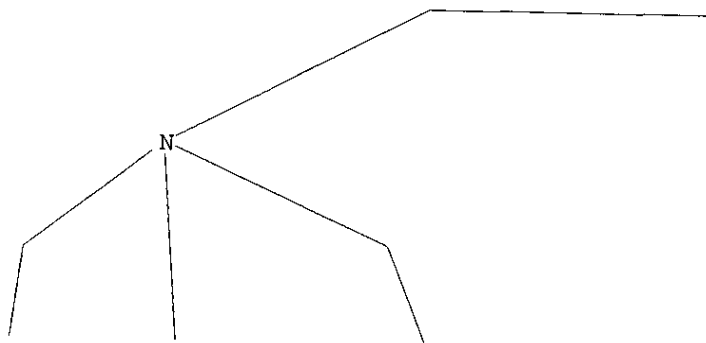


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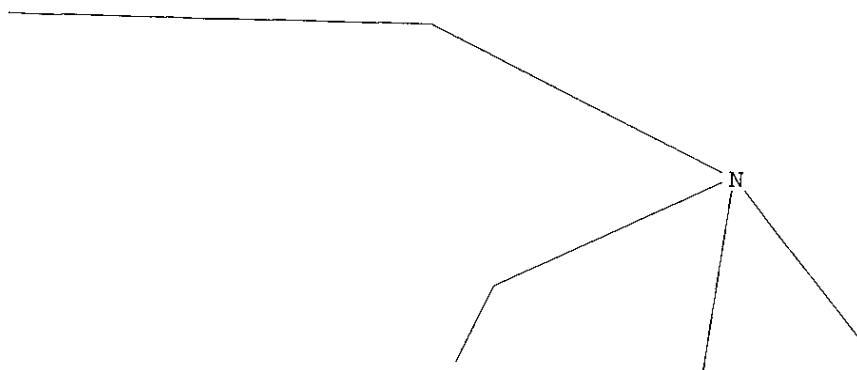


IT 232945-74-3P 475980-17-7P 475980-20-2P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (prepn., stability and Raman spectra)  
 RN 232945-74-3 HCAPLUS  
 CN Copper(2+), [.mu.-(peroxy-.kappa.O:.kappa.O')][.mu.-[rel-tetramethyl  
 (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-  
 di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]]]di-, stereoisomer (9CI) (CA INDEX NAME)

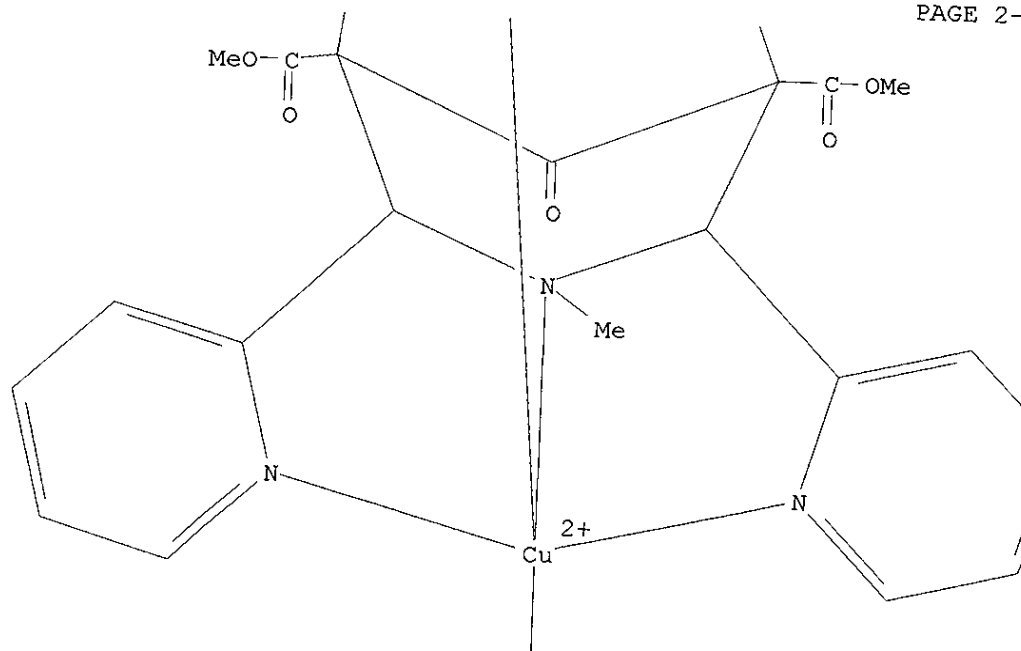
PAGE 1-A



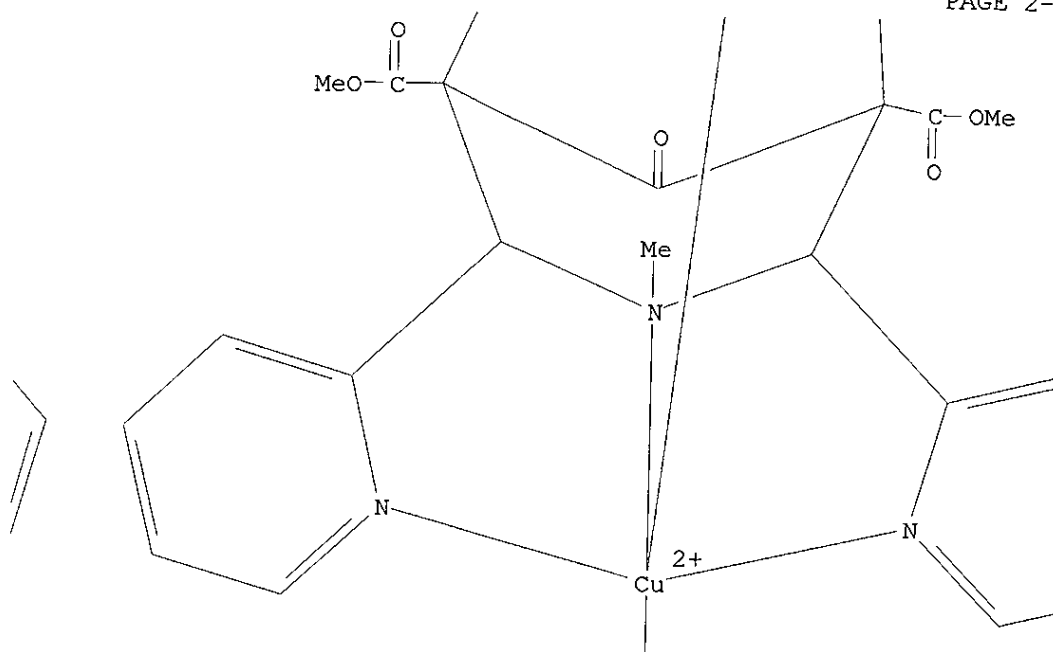
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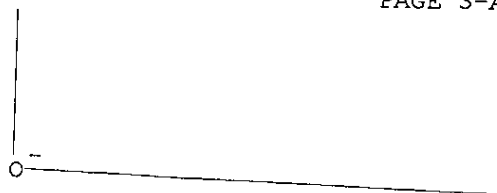
PAGE 2-B



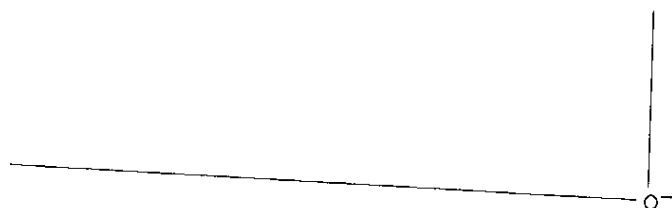
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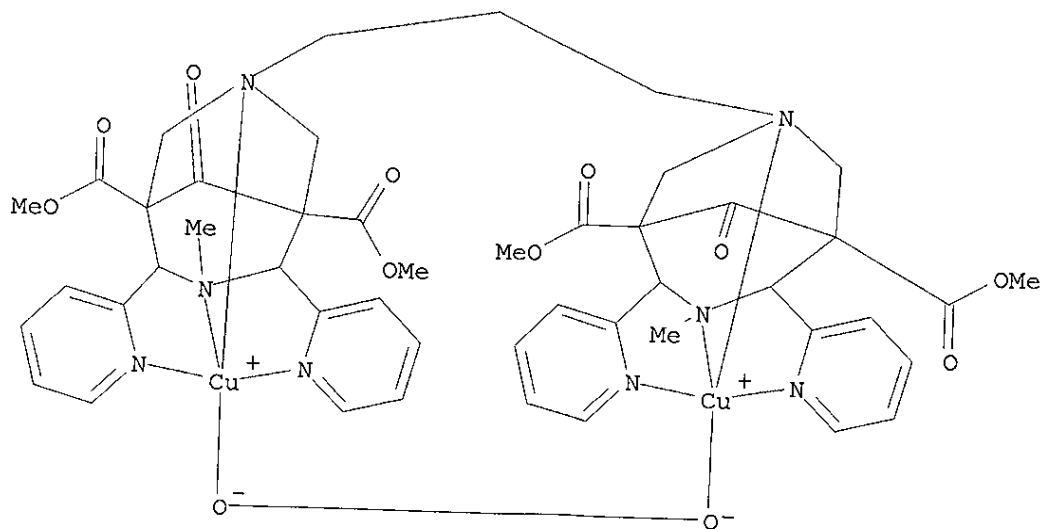
PAGE 3-A



PAGE 3-B

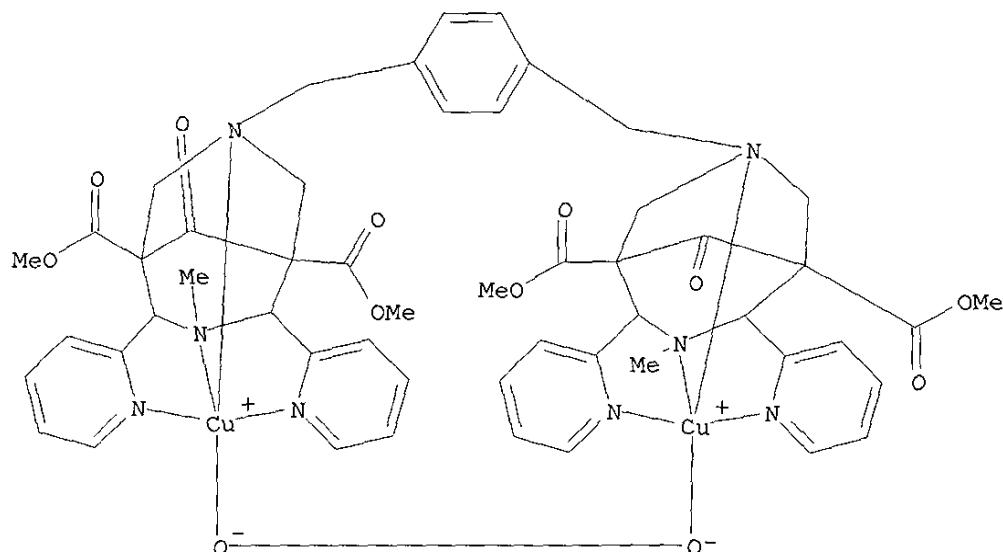


RN 475980-17-7 HCAPLUS  
 CN Copper, [.mu.-(peroxy-.kappa.O:.kappa.O')][.mu.-[rel-tetramethyl  
 (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-  
 di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]]]di-, stereoisomer (9CI) (CA INDEX NAME)



RN 475980-20-2 HCAPLUS  
 CN Copper, [.mu.-(peroxy-.kappa.O:.kappa.O')][.mu.-[rel-tetramethyl  
 (1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-[1,4-phenylenebis(methylene)]bis[7-  
 methyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-  
 1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, stereoisomer (9CI) (CA INDEX  
 NAME)





RE.CNT 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2002:623939 HCAPLUS

DN 138:198140

TI Stereochemistry and opioid receptor affinity of 2,4-dipyridine-3,7-diazabicyclo[3.3.1]nonanones - influence of the substituent in position N7

AU Cambareri, A.; Zlotos, D. P.; Holzgrabe, U.; Englberger, W.; Haurand, M.

CS Institut für Pharmazie und Lebensmittelchemie, Universität Würzburg, Würzburg, D-97074, Germany

SO Journal of Heterocyclic Chemistry (2002), 39(4), 789-798

CODEN: JHTCAD; ISSN: 0022-152X

PB HeteroCorporation

DT Journal

LA English

AB The stereochem. the 2,4-di-arene substituted 3,7-diazabicyclo[3.3.1]nonan-9-one 1,5-dicarboxylate skeleton was found to be regulated by the kind of substituents attached to the arene rings as well as to the nitrogens N3 and N7. Conformational isomers, i.e., chair/chair, boat/chair and chair/boat, in addn. to cis/trans configurational isomerism with respect to the arene rings were reported. Since the analgesic potency of the diazabicyclononanones, which is related to their affinity toward the .kappa.-opioid receptor, is governed by the stereochem. of the mols., the influence of the substituents at nitrogen N7 was studied herein. The various differently N7 substituted diazabicyclononanones were found to crystallize in a highly sym. chair/chair conformation. However, beside H22 none of the compds. exhibits high affinity to the .kappa. receptor. In contrast, some compds. with affinity to the .mu. receptor could be identified. In addn., the N7-(4-carboxybenzyl) substituted compd. was found to have affinity to the .delta. receptor in the submicromolar range of concn.

IT 42165-93-5P 42165-94-6P 42165-95-7P

500116-69-8P 500116-70-1P 500116-72-3P

500116-73-4P 500116-74-5P 500116-75-6P

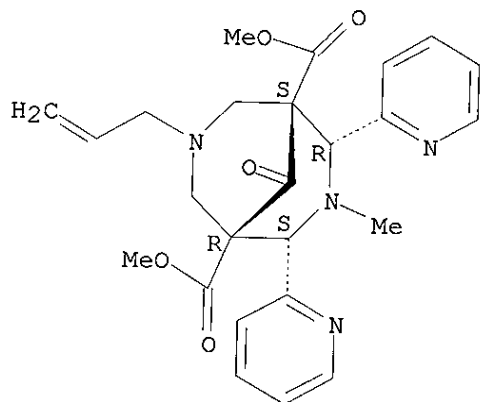
500116-76-7P 500116-77-8P 500116-78-9P  
500116-79-0P 500116-80-3P 500116-81-4P  
500116-82-5P

RL: PAC (Pharmacological activity); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
(structure-activity relationship and opioid receptor affinity of  
dipyridine diazabicyclononanones)

RN 42165-93-5 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-7-(2-propenyl)-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI)  
(CA INDEX NAME)

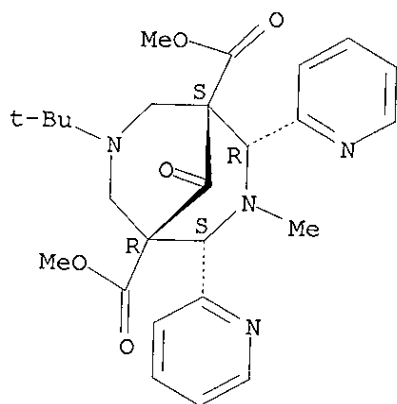
Relative stereochemistry.



RN 42165-94-6 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-(1,1-dimethylethyl)-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

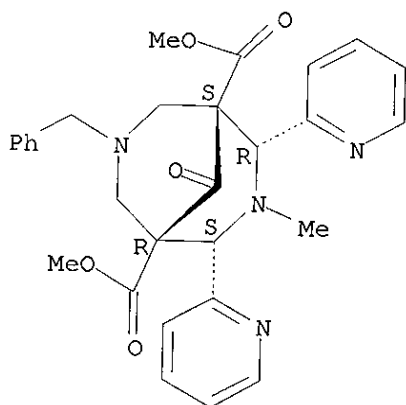


RN 42165-95-7 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-7-(phenylmethyl)-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel-

(9CI) (CA INDEX NAME)

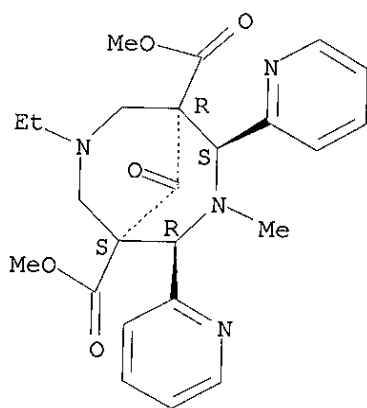
Relative stereochemistry.



RN 500116-69-8 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-ethyl-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

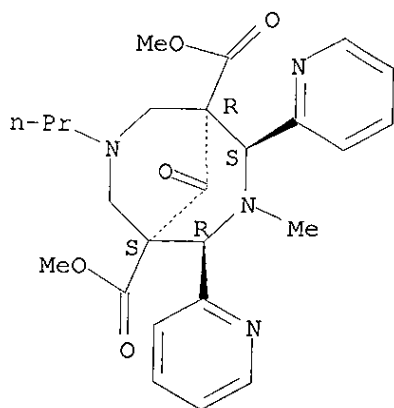
Relative stereochemistry.



RN 500116-70-1 HCAPLUS

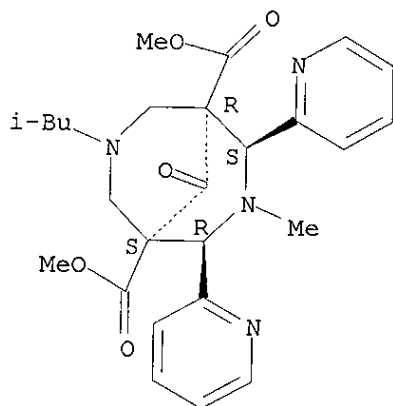
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-7-propyl-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



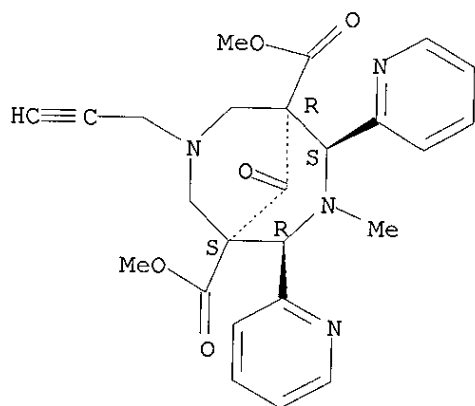
RN 500116-72-3 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-7-(2-methylpropyl)-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 500116-73-4 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-7-(2-propynyl)-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

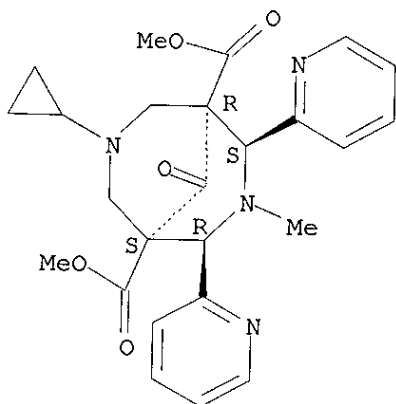
Relative stereochemistry.



RN 500116-74-5 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-cyclopropyl-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI)  
(CA INDEX NAME)

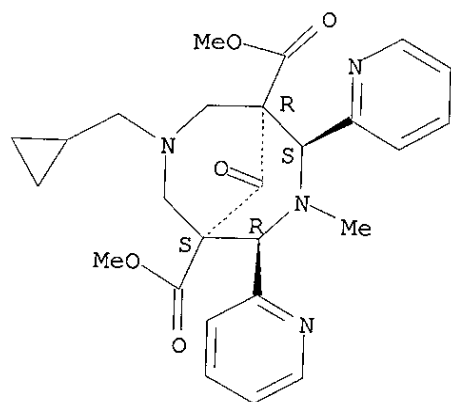
Relative stereochemistry.



RN 500116-75-6 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-(cyclopropylmethyl)-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

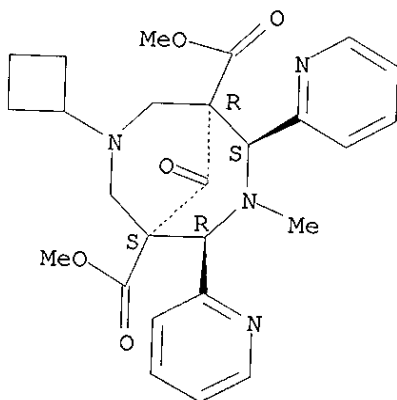
Relative stereochemistry.



RN 500116-76-7 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-cyclobutyl-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

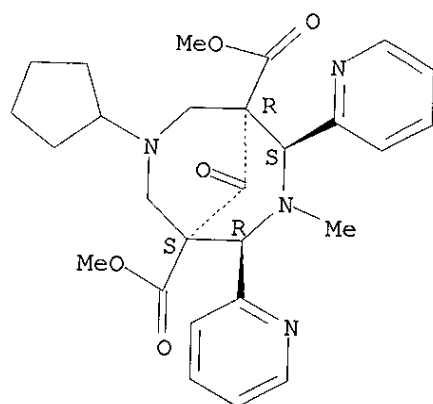
Relative stereochemistry.



RN 500116-77-8 HCAPLUS

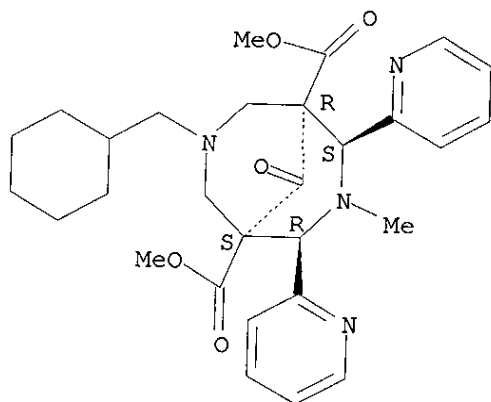
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-cyclopentyl-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



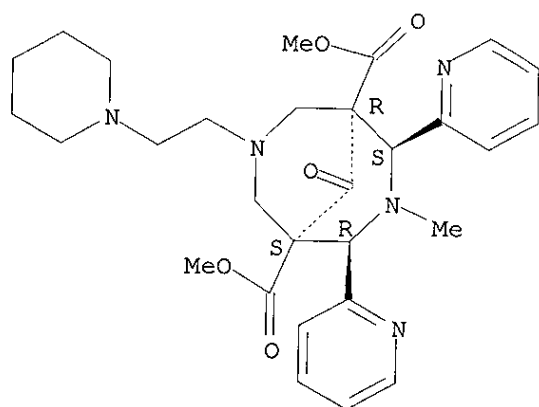
RN 500116-78-9 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-(cyclohexylmethyl)-3-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



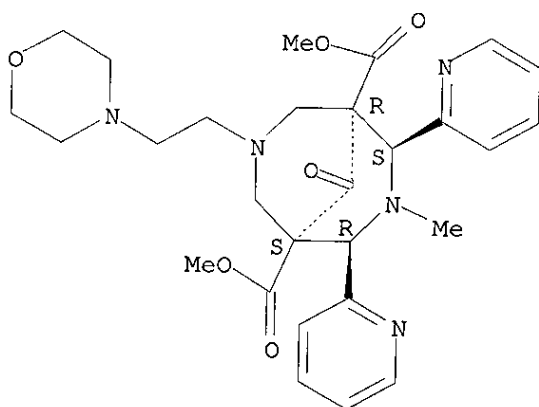
RN 500116-79-0 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-7-[2-(1-piperidinyl)ethyl]-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 500116-80-3 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-7-[2-(4-morpholinyl)ethyl]-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

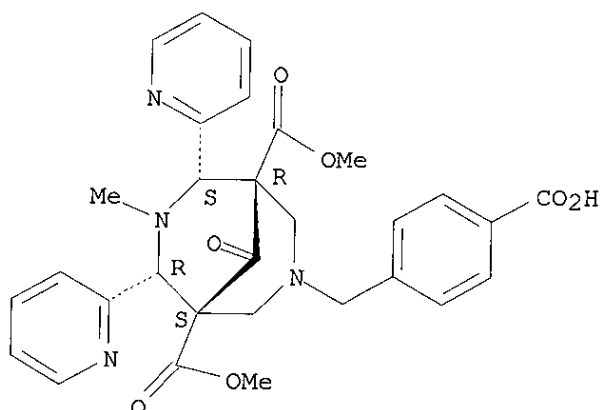
Relative stereochemistry.



RN 500116-81-4 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-[(4-carboxyphenyl)methyl]-3-methyl-9-oxo-2,4-di-2-pyridinyl-, 1,5-dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

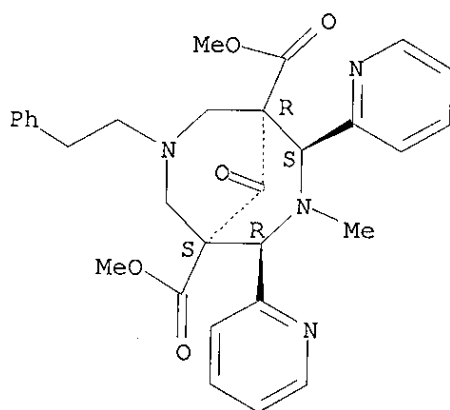
Relative stereochemistry.





RN 500116-82-5 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3-methyl-9-oxo-7-(2-phenylethyl)-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI)  
 (CA INDEX NAME)

Relative stereochemistry.

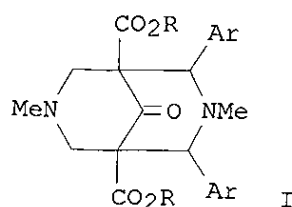


RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2000:632699 HCAPLUS  
 DN 133:362761  
 TI Synthesis and Opioid Receptor Affinity of a Series of 2,4-Diaryl-Substituted 3,7-Diazabicyclononanones  
 AU Siener, Tom; Cambareri, Antonella; Kuhl, Ulrich; Englberger, Werner; Haurand, Michael; Koegel, Babette; Holzgrabe, Ulrike  
 CS Institute of Pharmacy and Food Chemistry, University of Wuerzburg, Wuerzburg, 97074, Germany  
 SO Journal of Medicinal Chemistry (2000), 43(20), 3746-3751  
 CODEN: JMCMAR; ISSN: 0022-2623  
 PB American Chemical Society  
 DT Journal  
 LA English

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

OS CASREACT 133:362761  
GI



AB 3,7-Diazabicyclo[3.3.1]nonan-9-ones (I; R = Me, Et; Ar = 2-, 3-, 4-pyridinyl; 1-, 2-naphthalenyl; 2-, 4-quinolinyl; substituted phenyl) were synthesized using a double Mannich procedure. Radioligand binding assays were performed to measure the affinity of the compds. to the .mu.-, .delta.-, and .kappa.-opioid receptors. The affinity of all 2,4-diphenyl-substituted 3,7-diazabicyclo[3.3.1]nonan-9-ones to the .mu.- and .delta.-receptors was found to be low. In contrast, with exception of the nitrophenyl- and cyanophenyl-substituted compds., most of the diazabicycles showed considerable affinity for the .kappa.-receptor. In particular, the m-fluoro-, p-methoxy-, and m-hydroxy-substituted compds. have an affinity in the submicromolar range. Because of soly. problems in aq. media, salts of HZ2 (I; R = Me, Ar = 2-pyridinyl) were synthesized. The methiodide shows high .kappa.-affinity and may, thus, be a promising candidate for development of a peripheral .kappa.-agonist, e.g., for use in the case of rheumatoid arthritis.

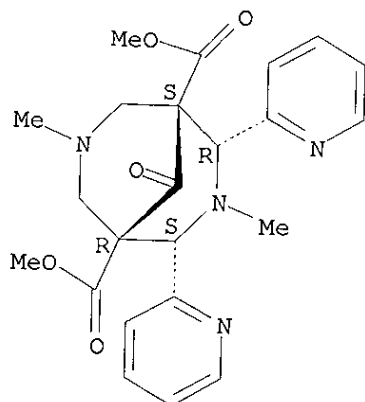
IT 42165-92-4P 250339-63-0P 306994-60-5P  
306994-61-6P 306994-63-8P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
(prepn. and opioid receptor affinity of 2,4-diaryl-3,7-diazabicyclononanones)

RN 42165-92-4 HCAPLUS

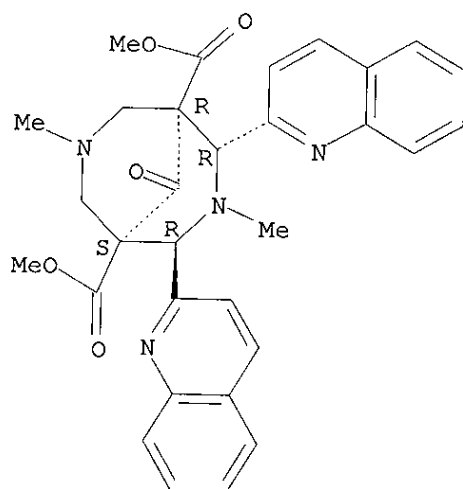
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 250339-63-0 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-quinolinyl-, dimethyl ester, (1R,2R,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.

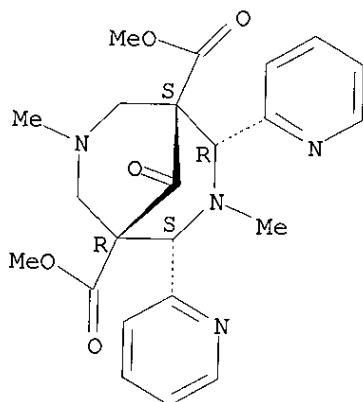


RN 306994-60-5 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel-, ethanedioate (9CI) (CA INDEX NAME)

CM 1

CRN 42165-92-4  
 CMF C23 H26 N4 O5

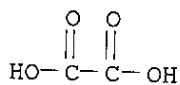
Relative stereochemistry.



CM 2

CRN 144-62-7

CMF C2 H2 O4



RN 306994-61-6 HCAPLUS

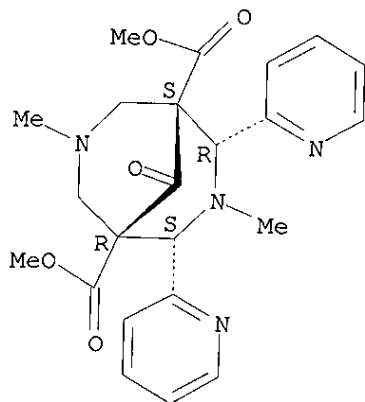
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel-, perchlorate (9CI)  
(CA INDEX NAME)

CM 1

CRN 42165-92-4

CMF C23 H26 N4 O5

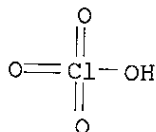
Relative stereochemistry.



CM 2

CRN 7601-90-3

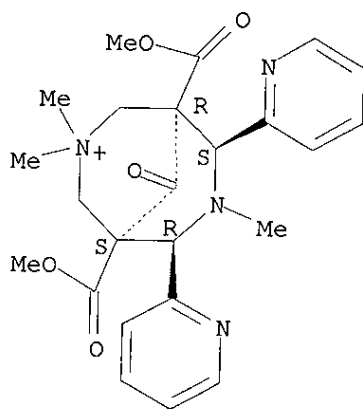
CMF Cl H O4



RN 306994-63-8 HCAPLUS

CN 7-Aza-3-azoniabicyclo[3.3.1]nonane, 1,5-bis(methoxycarbonyl)-3,3,7-trimethyl-9-oxo-6,8-di-2-pyridinyl-, iodide, (1R,5S,6R,8S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



● I<sup>-</sup>

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L24 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:186213 HCAPLUS  
DN 132:302489  
TI A copper(I) oxygenation precursor in the entatic state: two isomers of a copper(I) compound of a rigid tetradentate ligand  
AU Borzel, Heidi; Comba, Peter; Hagen, Karl S.; Katsichtis, Charis; Pritzkow, Hans  
CS Anorganisch-Chemisches Institut, Universitat Heidelberg,  
Anorganisch-Chemisches Institut, Heidelberg, 69120, Germany  
SO Chemistry--A European Journal (2000), 6(5), 914-919  
CODEN: CEUJED; ISSN: 0947-6539  
PB Wiley-VCH Verlag GmbH

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

DT Journal

LA English

AB Oxygenation of  $[\text{Cu}(\text{L1})(\text{NCCH}_3)]^+$  ( $\text{L1} = \text{di-Me } 2,4\text{-bis}(2\text{-pyridinyl})\text{-}3,7\text{-diazabicyclo-[}3.3.1\text{]-nonane-}9\text{-on-}1,5\text{-dicarboxylate}$ ) leads to a relatively stable  $\mu\text{-peroxo-dicopper(II)}$  product. The stability of this type of oxygenation product was shown before to be the result of the square pyramidal geometry of  $\text{L1}$ ; preorganization by a dinucleating ligand increases the stability of the  $\mu\text{-peroxo-dicopper(II)}$  compd. The structural data presented here indicate that destabilization of the  $\text{Cu(I)}$  precursor is another important factor. There are two isomers of  $[\text{Cu}(\text{L1})(\text{NCCH}_3)]^+$ ; one is yellow, and the other is red. X-ray crystallog. indicates that one pyridinyl donor is not coordinated in the yellow compd. and that the red compd. is 5-coordinate. In light of the x-ray structure of the metal-free ligand and that of the corresponding  $\text{Cu(II)}$  compd., it emerges that the ligand cavity is well suited for  $\text{Cu(II)}$ , whereas the  $\text{Cu(I)}$  compds. are highly strained. This is supported by  $1\text{H NMR}$  spectra of the  $\text{Cu(I)}$  species where a fast dynamic process leads to line broadening and by electrochem. data, which indicate that the  $\text{Cu(II)}$  products are exceptionally stable. Also presented are structural, ( $\text{Cu(II)}$ ), electrochem., and spectroscopic data ( $1\text{H NMR}$ ,  $\text{Cu(I)}$ ) of  $[\text{Cu}(\text{L2})(\text{X})]^{n+}$  with a Me substituent at the  $\alpha\text{-C}$  atom of the two coordinated pyridinyl groups ( $\text{L2} = \text{di-Me } 2,4\text{-bis}(2\text{-pyridinyl-}6\text{-methyl})\text{-}3,7\text{-diazabicyclo-[}3.3.1\text{]-nonane-}9\text{-on-}1,5\text{-dicarboxylate}$ ). There are two structural forms of  $[\text{Cu(II)}(\text{L2})(\text{X})]^{n+}$  ( $\text{X} = \text{NCCH}_3, \text{Cl}$ ), which depend on the steric demand of the 5th donor  $\text{X}$ . For both, van der Waals repulsion leads to a destabilization of the  $\text{Cu(II)}$  products, and this is also evident from an increase in the redn. potential ( $-110 \text{ mV}$  vs.  $-477 \text{ mV}$ ,  $\text{Ag/AgNO}_3$ ).

IT 264910-16-9P 264910-18-1P 264910-24-9P

264910-28-3P 264910-46-5P 264910-49-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and crystal and mol. structure)

RN 264910-16-9 HCAPLUS

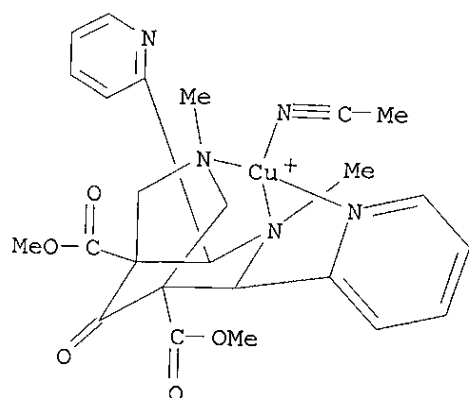
CN Copper(1+), (acetonitrile)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2-(2-pyridinyl-.kappa.N)-4-(2-pyridinyl)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (T-4)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 264910-15-8

CMF C25 H29 Cu N5 O5

CCI CCS

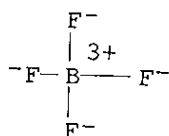


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



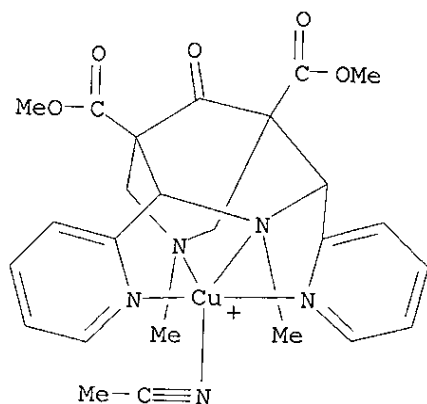
RN 264910-18-1 HCAPLUS  
 CN Copper(1+), (acetonitrile)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (SP-5-54)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 232945-69-6

CMF C25 H29 Cu N5 O5

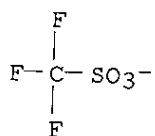
CCI CCS



CM 2

CRN 37181-39-8

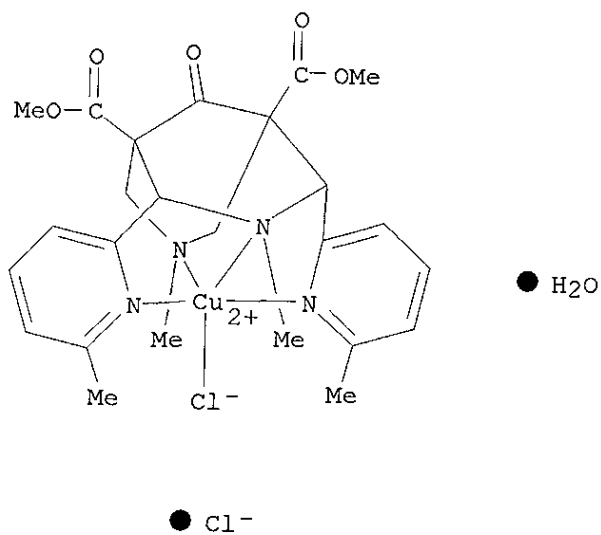
CMF C F3 O3 S



RN 264910-24-9 HCAPLUS

CN Copper(1+), chloro[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-2,4-bis(6-methyl-2-pyridinyl-.kappa.N)-9-oxo-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, monohydrate, (SP-5-45)-(9CI) (CA INDEX NAME)

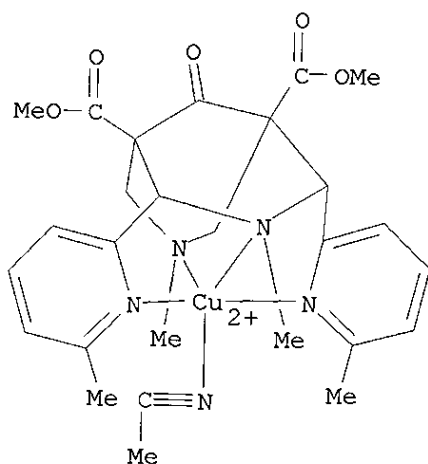




RN 264910-28-3 HCAPLUS  
 CN Copper(2+), (acetonitrile)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-2,4-bis(6-methyl-2-pyridinyl-.kappa.N)-9-oxo-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (SP-5-54)-, bis[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

CM 1

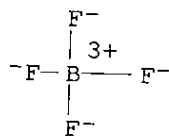
CRN 264910-27-2  
 CMF C27 H33 Cu N5 O5  
 CCI CCS



CM 2

CRN 14874-70-5

CMF B F4  
CCI CCS



RN 264910-46-5 HCAPLUS

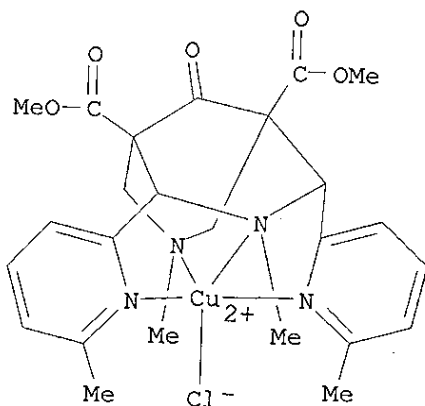
CN Copper(1+), chloro[rel-(1R,2S,4R,5S)-dimethyl 3,7-dimethyl-2,4-bis(6-methyl-2-pyridinyl-.kappa.N)-9-oxo-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (SP-5-45)-, chloride, compd. with acetonitrile (1:1), monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 264910-45-4

CMF C25 H30 Cl Cu N4 O5 . Cl

CCI CCS

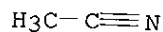


● Cl<sup>-</sup>

CM 2

CRN 75-05-8

CMF C2 H3 N



RN 264910-49-8 HCAPLUS

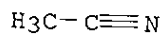
CN Copper(2+), (acetonitrile)[rel-(1R,2S,4R,5S)-dimethyl 3,7-dimethyl-2,4-bis(6-methyl-2-pyridinyl-.kappa.N)-9-oxo-3,7-diazabicyclo[3.3.1]nonane-1,5-

dicarboxylate-.kappa.N3,.kappa.N7]-, (SP-5-54)-, bis[tetrafluoroborate(1-)], compd. with acetonitrile (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 75-05-8

CMF C2 H3 N



CM 2

CRN 264910-28-3

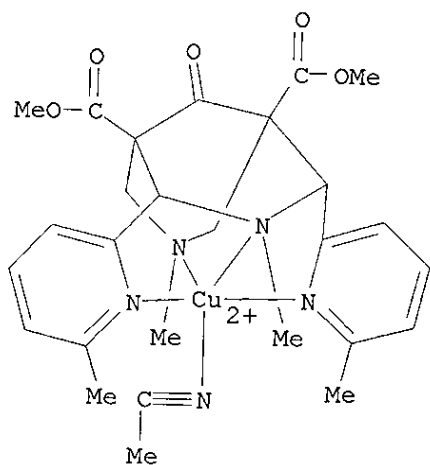
CMF C27 H33 Cu N5 O5 . 2 B F4

CM 3

CRN 264910-27-2

CMF C27 H33 Cu N5 O5

CCI CCS

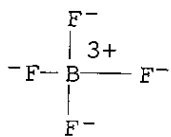


CM 4

CRN 14874-70-5

CMF B F4

CCI CCS



IT 264910-21-6P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 264910-21-6 HCAPLUS

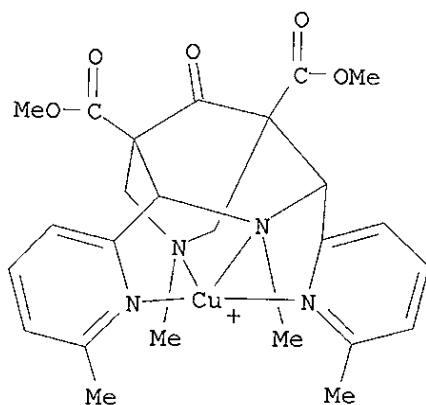
CN Copper(1+), [rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-2,4-bis(6-methyl-2-pyridinyl-.kappa.N)-9-oxo-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (T-4)-, salt with trifluoromethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 264910-20-5

CMF C25 H30 Cu N4 O5

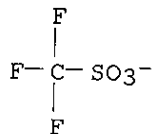
CCI CCS



CM 2

CRN 37181-39-8

CMF C F3 O3 S



RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1999:616646 HCAPLUS

DN 132:64248

TI Synthesis, X-ray analysis and spectroscopic characterization of the hemiaminal cyclization product from 2,4-dipyridine substituted 3,7-diazabicyclo[3.3.1]nonanone 1,5-diesters

AU Kuhl, Ulrich; Cambareri, Antonella; Sauber, Christian; Sorgel, Fritz; Hartmann, Rudolf; Euler, Harald; Kirfel, Armin; Holzgrabe, Ulrike

CS Am Hubland, Institut fur Pharmazie und Lebensmittelchemie, Universitat  
Wurzburg, Wurzburg, D-97074, Germany

SO Journal of the Chemical Society, Perkin Transactions 2: Physical Organic  
Chemistry (1999), (10), 2083-2088  
CODEN: JCPKBH; ISSN: 0300-9580

PB Royal Society of Chemistry

DT Journal

LA English

AB The 2,4-dipyridine substituted 3,7-dimethyl-3,7-diazabicyclo[3.3.1]nonan-9-one 1,5-diester (HZ2) is characterized by a high analgesic potency. The attempt to form ammonium salts of HZ2 or to N-demethylate position 7 resulted in an unexpected hemiaminal cyclization product. The structure was elucidated by an X-ray anal.; the 1H- and 13C-NMR spectra could be fully assigned by means of H,H-COSY, Grad-HSQC-EA and ACCORD-HMBC expts. The MS spectra of the hemiaminal exhibited a ring opening. Interestingly, ESI-MS/MS expts. of HZ2 in aq. soln. showed the formation of a hydrated product. The fragmentation pathways of HZ2 and the hydrated product are rather different indicating the formation of a carboxylate.

IT **253304-59-5P**  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn., X-ray anal. and spectroscopic characterization of the hemiaminal cyclization product from 2,4-dipyridine substituted 3,7-diazabicyclo[3.3.1]nonanone 1,5-diester)

RN 253304-59-5 HCAPLUS

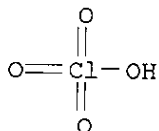
CN 10,4-(Iminomethano)-1H-pyrido[3,4-b]indolizin-5-ium, 2,3,4,4a,10,10a-hexahydro-4a-hydroxy-4,10a-bis(methoxycarbonyl)-2,11-dimethyl-12-(2-pyridinyl)-, (4R,4aS,10S,10aS,12S)-rel-, perchlorate (salt), monoperchlorate, monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 7601-90-3

CMF Cl H O4

*Claim 20?*



CM 2

CRN 253304-58-4

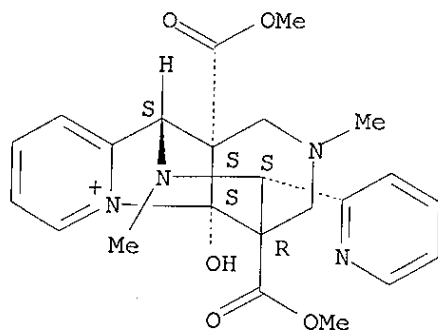
CMF C23 H27 N4 O5 . Cl O4

CM 3

CRN 253304-57-3

CMF C23 H27 N4 O5

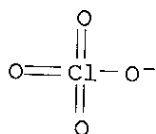
Relative stereochemistry.



CM 4

CRN 14797-73-0

CMF Cl 04



IT 253304-61-9P 253304-62-0P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn., X-ray anal. and spectroscopic characterization of the hemiaminal cyclization product from 2,4-dipyridine substituted 3,7-diazabicyclo[3.3.1]nonanone 1,5-diester)

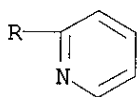
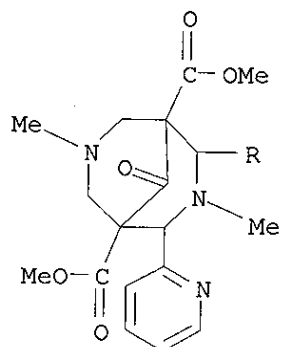
RN 253304-61-9 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, ethanedioate (1:1) (9CI) (CA INDEX NAME)

CM 1

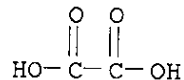
CRN 253304-60-8

CMF C23 H26 N4 O5



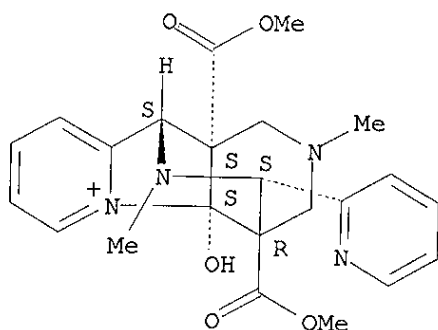
CM 2

CRN 144-62-7  
CMF C2 H2 O4



RN 253304-62-0 HCAPLUS  
CN 10,4-(Iminomethano)-1H-pyrido[3,4-b]indolizin-5-ium, 2,3,4,4a,10,10a-hexahydro-4a-hydroxy-4,10a-bis(methoxycarbonyl)-2,11-dimethyl-12-(2-pyridinyl)-, chloride, monohydrochloride, (4R,4aS,10S,10aS,12S)-rel- (9CI)  
(CA INDEX NAME)

Relative stereochemistry.



● Cl<sup>-</sup>

● HCl

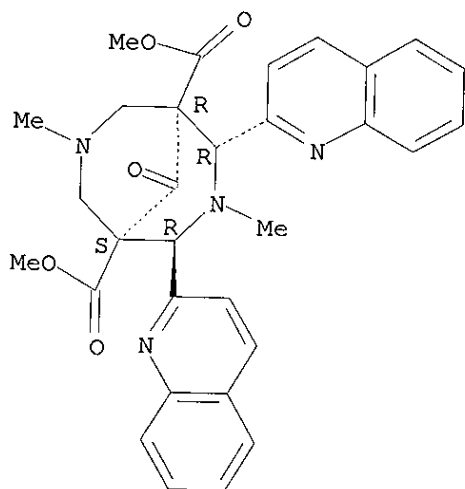
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L24 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1999:563248 HCAPLUS  
DN 131:350972  
TI Conformational and configurational behavior of .kappa.-agonistic  
3,7-diazabicyclo[3.3.1]nonan-9-ones-synthesis, nuclear magnetic resonance  
studies and semiempirical PM3 calculations  
AU Siener, Tom; Holzgrabe, Ulrike; Drosihn, Susanne; Brandt, Wolfgang  
CS Am Hubland, Institut fur Pharmazie und Lebensmittelchemie, Universitat  
Wurzburg, Wurzburg, D-97074, Germany  
SO Journal of the Chemical Society, Perkin Transactions 2: Physical Organic  
Chemistry (1999), (9), 1827-1834  
CODEN: JCPKBH; ISSN: 0300-9580  
PB Royal Society of Chemistry  
DT Journal  
LA English  
AB 2,4-Diaryl substituted 3,7-diazabicyclo[3.3.1]nonan-9-one 1,5-diesters  
were found to have a high affinity for .kappa.-opioid receptors. To  
develop highly potent analgesics, the purpose of this study was the  
synthesis and the structural characterization of the novel  
2,4-bis(4-nitrophenyl), 2,4-bis(3-nitrophenyl), 2,4-bis(4-quinolyl),  
2,4-bis(2-quinolyl), 2,4-bis(1-naphthyl) and 2,4-bis(2-naphthyl)  
substituted 3,7-diazabicyclo[3.3.1]nonan-9-one 1,5-diesters by means of  
NMR spectroscopy and mol. modeling. Several derivs. undergo trans-cis  
isomerization of the arom. rings linked to the rigid skeleton whereas  
others show rotational isomerization. Semiempirical quantum-chem. PM3  
calcs. were performed to analyze the thermodyn. stability of the isomers  
as well as the mechanism of the trans-cis or cis-trans isomerization.  
IT 250339-63-0P  
RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
SPN (Synthetic preparation); PREP (Preparation); PROC  
(Process)



(synthesis, NMR studies and semiempirical PM3 calcns. of of  
 .kappa.-agonistic 3,7-diazabicyclo[3.3.1]nonan-9-ones)  
 RN 250339-63-0 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-  
 2,4-di-2-quinolinyl-, dimethyl ester, (1R,2R,4R,5S)-rel- (9CI) (CA INDEX  
 NAME)

Relative stereochemistry.



RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L24 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1999:382574 HCAPLUS  
 DN 131:124515  
 TI Stabilization of copper dioxygen compounds: design, synthesis, and  
 characterization  
 AU Borzel, Heidi; Comba, Peter; Katsichtis, Charis; Kiefer, Wolfgang; Lienke,  
 Achim; Nagel, Volker; Pritzkow, Hans  
 CS Universitat Heidelberg, Anorganisch-Chemisches Institut, Heidelberg,  
 D-69120, Germany  
 SO Chemistry--A European Journal (1999), 5(6), 1716-1721  
 CODEN: CEUJED; ISSN: 0947-6539  
 PB Wiley-VCH Verlag GmbH  
 DT Journal  
 LA English  
 AB Oxygenation in acetonitrile of the copper(I) complex of the rigid  
 tetradentate, substituted bispidine ligand L1 with a diamine-bis-pyridinyl  
 donor set (L1 = di-Me N,N'-dimethyl-2,4-bis(2-pyridinyl)-3,7-  
 diazabicyclo[3.3.1]nonane-9-diol(or 9-one)-1,5-dicarboxylate) produces an  
 end-on ( $\mu$ -peroxo)dycopper(II) compd. that is stable in soln. up to 250  
 K. The spectroscopic characterization of this species (UV/visible and  
 Raman spectroscopy) and an x-ray structural anal. of the corresponding  
 mononuclear copper(II) compd.  $[\text{Cu}(\text{L1})\text{Cl}]^+$  indicate that the deep purple  
 oxygenation product has two distorted square pyramidal copper(II)  
 chromophores linked by a  $\mu$ -peroxo bridge. Mol. mechanics calcns. were  
 used to interpret the relative stability of the copper dioxygen product  
 $[\{\text{Cu}(\text{L1})\}_2\text{O}_2]^{2+}$  and to design the dinucleating ligand L2, based on two L1  
 binding sites, linked by a  $-\text{CH}_2\text{CH}_2-$  bridge. The corresponding deep purple

copper dioxygen product  $[\text{Cu}_2(\text{L}_2)(\text{O}_2)]^{2+}$  has spectroscopic characteristics (UV/visible and Raman spectra) that are similar but not identical to those of  $[\{\text{Cu}(\text{L}_1)\}_2\text{O}_2]^{2+}$ ; this ( $\mu$ -peroxo)dicopper(II) compd. is stable at ambient temp. ( $t_{1/2}(298 \text{ K}) = 50 \text{ min}$ ).

IT **232945-68-5P**

RL: RCT (Reactant); **SPN (Synthetic preparation); PREP**

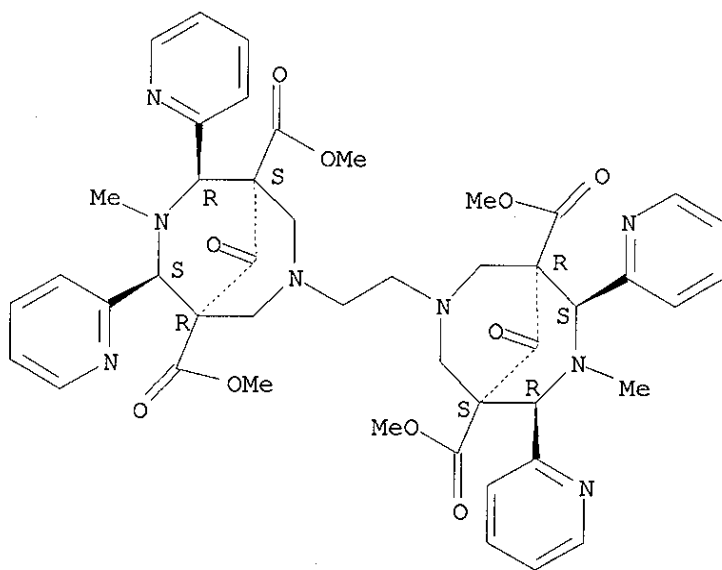
**(Preparation)**; RACT (Reactant or reagent)

(for prepn. of copper di(pyridinyl)diazabicyclononanedicarboxylate mononuclear and peroxo-bridged dinuclear complexes)

RN 232945-68-5 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-di-2-pyridinyl-, tetramethyl ester, (1R,1'R,2S,2'S,4R,4'R,5S,5'S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT **232945-75-4P**

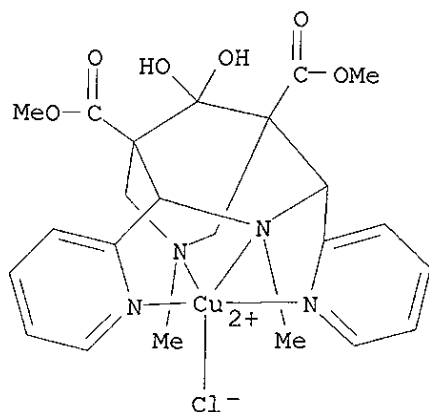
RL: PRP (Properties); **SPN (Synthetic preparation); PREP**

**(Preparation)**

(prepn. and crystal structure)

RN 232945-75-4 HCAPLUS

CN Copper(1+), chloro[rel-dimethyl (1R,2S,4R,5S)-9,9-dihydroxy-3,7-dimethyl-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (SP-5-54)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

IT 232945-70-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (prepn. and oxygenation)

RN 232945-70-9 HCAPLUS

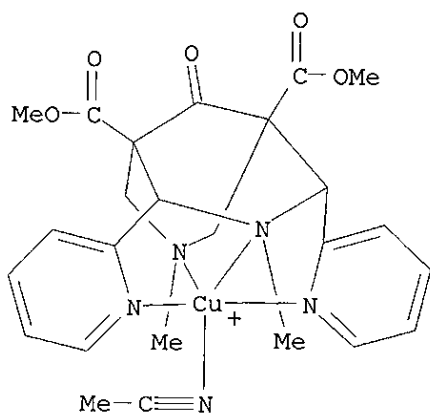
CN Copper(1+), (acetonitrile)[rel-dimethyl (1R,2S,4R,5S)-3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (SP-5-54)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 232945-69-6

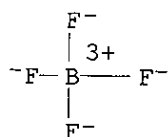
CMF C25 H29 Cu N5 O5

CCI CCS



CM 2

CRN 14874-70-5  
CMF B F4  
CCI CCS



IT 232945-72-1P 233604-20-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 232945-72-1 HCAPLUS

CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
(1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-  
di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
.kappa.N3,.kappa.N7]]]di-, stereoisomer, salt with  
trifluoromethanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

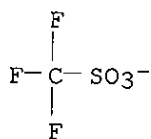
CM 1

CRN 232945-71-0  
CMF C50 H56 Cu2 N10 O10  
CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 37181-39-8  
CMF C F3 O3 S



RN 233604-20-1 HCAPLUS

CN Copper(2+), bis(acetonitrile)[.mu.-[rel-tetramethyl  
(1R,1'R,5S,5'S,6R,6'R,8S,8'S)-3,3'-(1,2-ethanediyl)bis[7-methyl-9-oxo-6,8-  
di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-  
dicarboxylate]]]di-, stereoisomer, bis[tetrafluoroborate(1-)] (9CI) (CA  
INDEX NAME)

CM 1

CRN 232945-71-0  
CMF C50 H56 Cu2 N10 O10  
CCI CCS

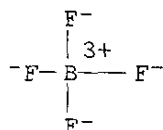
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 14874-70-5

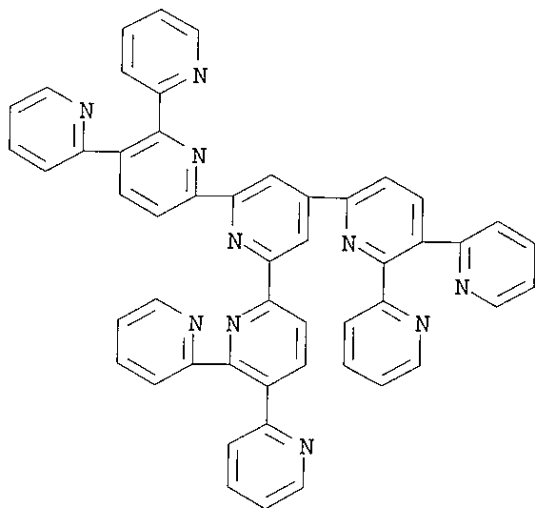
CMF B F4

CCI CCS

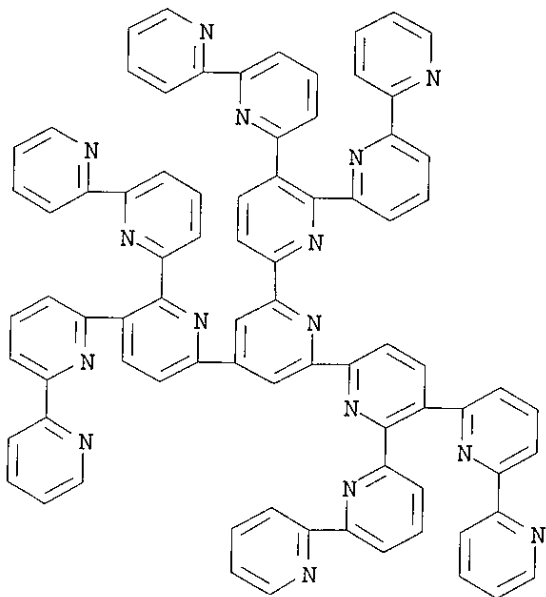


RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1998:765049 HCAPLUS  
DN 130:95461  
TI The new and simple 'LEGO' system: its application to the synthesis of  
superbranched oligopyridines  
AU Pabst, Gunther R.; Sauer, Jurgen  
CS Institut fur Organische Chemie der Universitat Regensburg, Regensburg,  
D-93040, Germany  
SO Tetrahedron Letters (1998), 39(48), 8817-8820  
CODEN: TELEAY; ISSN: 0040-4039  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
AB The condensation of pyridine-2,4,6-tricarboxytrisamidrazone with  
1,2-dicarbonyl compds. leads to trisubstituted 1,2,4-triazines. These  
1,2,4-triazines can be easily transformed to superbranched pyridines by  
[4+2] cycloaddn. with norborna-2,5-diene, followed by [4+2]  
cycloreversions of nitrogen and cyclopentadiene. This reaction sequence  
offers a new, simple and general access to superbranched oligopyridines.  
IT 219567-24-5P 219567-25-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of superbranched oligopyridines)  
RN 219567-24-5 HCAPLUS  
CN 2,2':6',2'':4'',2''':5''',2''''-Quinquepyridine, 3',6'''-di-2-pyridinyl-  
6'''-[2,2':3',2''-terpyridin]-6'-yl- (9CI) (CA INDEX NAME)



RN 219567-25-6 HCAPLUS  
 CN 2,2':6',2'':6'',2''':4''',2''':5''',2''':6''',2''':6'''-Septipyridine,  
 3'',6''''-bis([2,2'-bipyridin]-6-yl)-6'''-[2,2':6',2'':3'',2'':6''',2''':-  
 quinquepyridin]-6''-yl- (9CI) (CA INDEX NAME)

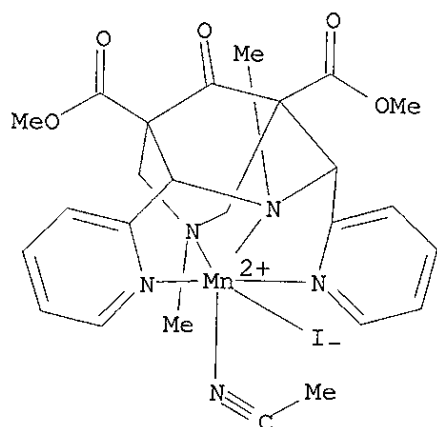


RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1998:757601 HCAPLUS  
 DN 130:133109  
 TI Synthesis and characterization of manganese(II) compounds with  
 tetradentate ligands based on the bispidine backbone

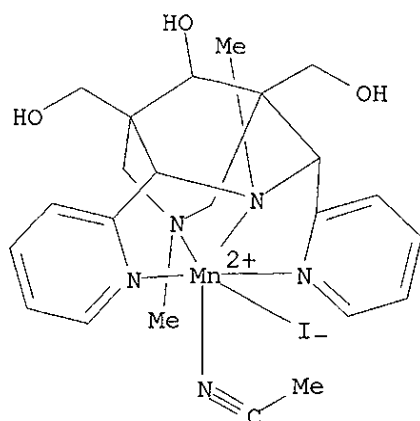
KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

- AU Comba, Peter; Kanellakopulos, Basil; Katsichtis, Charis; Lienke, Achim; Pritzkow, Hans; Rominger, Frank  
 CS Anorganisch-Chemisches Institut, Universitat Heidelberg, Heidelberg, 69120, Germany  
 SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1998), (23), 3997-4002  
 CODEN: JCDTBI; ISSN: 0300-9246  
 PB Royal Society of Chemistry  
 DT Journal  
 LA English  
 AB Reaction of the tetradentate ligand di-Me 3,7-dimethyl-9-oxo-2,4-bis(2-pyridyl)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate (L1) with Mn(II) chloride or iodide in MeOH yielded [MnL1Cl2] and [MnL1I2], resp. Reaction of L1 with Ag(I) triflate Ag(O3SCF3) converted these compds. into [MnL1(O3SCF3)2]. Redn. of L1 with NaBH4 in MeOH and LiAlH4 in THF led to the triol 1,5-bis(hydroxymethylene)-3,7-dimethyl-2,4-bis(2-pyridyl)-3,7-diazabicyclo[3.3.1]nonan-9-ol (L2); the redn. is stereoselective and yields the syn isomer. Complexation of Mn(II) chloride and iodide with L2 produced [MnL2Cl2] and [MnL2I2] which have a higher thermal stability than [MnL1X2]. [MnL1Cl2], [MnL1I2], [MnL1(O3SCF3)2], [MnL2Cl2] and [MnL2I2] are characterized spectroscopically, electrochem. and by their magnetic, conductometric, thermal and structural properties (x-ray analyses of [MnL1Cl2] and [MnL2Cl2]).
- IT 219957-10-5P 219957-12-7P 219957-14-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (formation in soln.)  
 RN 219957-10-5 HCAPLUS  
 CN Manganese(1+), (acetonitrile)[dimethyl 3,7-dimethyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]iodo-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

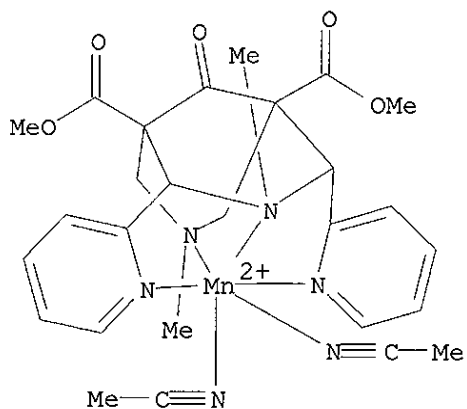
- RN 219957-12-7 HCAPLUS  
 CN Manganese(1+), (acetonitrile)[9-hydroxy-3,7-dimethyl-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dimethanol-.kappa.N3,.kappa.N7]iodo-, iodide (9CI) (CA INDEX NAME)



RN 219957-14-9 HCAPLUS  
 CN Manganese(2+), bis(acetonitrile)[dimethyl (3-endo,7-endo)-3,7-dimethyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (OC-6-54)-, salt with trifluoromethanesulfonic acid (1:2) (9CI) (CA INDEX NAME)

CM 1

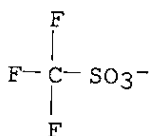
CRN 219957-13-8  
 CMF C27 H32 Mn N6 O5  
 CCI CCS



CM 2

CRN 37181-39-8  
 CMF C F3 O3 S





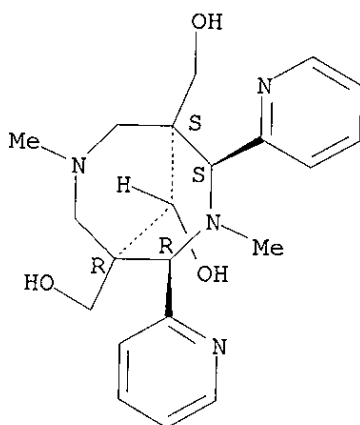
IT 219957-01-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and complexation with manganese halides)

RN 219957-01-4 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dimethanol, 9-hydroxy-3,7-dimethyl-2,4-di-2-pyridinyl-, (2-endo,4-endo,9-syn)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

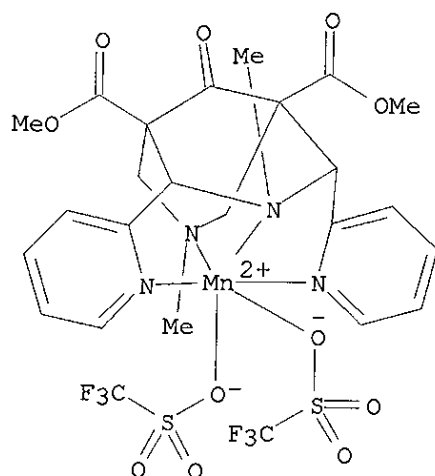


IT 219957-06-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 219957-06-9 HCAPLUS

CN Manganese, [dimethyl (3-endo,7-endo)-3,7-dimethyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]bis(trifluoromethanesulfonato-.kappa.O)-, (OC-6-54)- (9CI) (CA INDEX NAME)



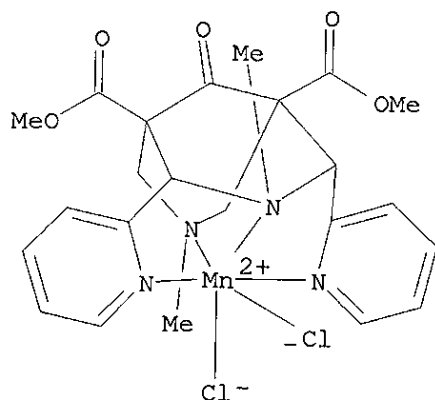
IT 219957-02-5P 219957-07-0P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn., crystal structure, solid-state and soln. properties)

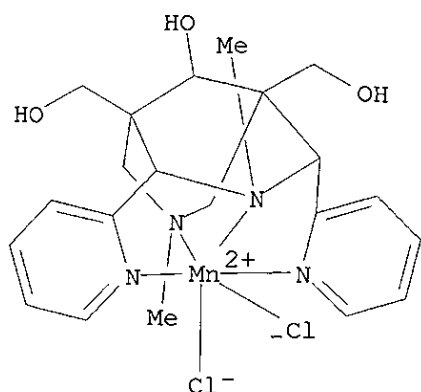
RN 219957-02-5 HCAPLUS

CN Manganese, dichloro[dimethyl (3-endo,7-endo)-3,7-dimethyl-9-oxo-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (OC-6-54)- (9CI) (CA INDEX NAME)



RN 219957-07-0 HCAPLUS

CN Manganese, dichloro[9-hydroxy-3,7-dimethyl-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dimethanol-.kappa.N3,.kappa.N7]-, hydrate (2:1), stereoisomer (9CI) (CA INDEX NAME)



● 1/2 H<sub>2</sub>O

IT 219957-03-6P 219957-08-1P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (prepn., solid-state and soln. properties)  
 RN 219957-03-6 HCAPLUS  
 CN Manganese, [dimethyl (3-endo,7-endo)-3,7-dimethyl-9-oxo-6,8-di(2-pyridinyl-  
 .kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]diiodo-, (OC-6-54)- (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

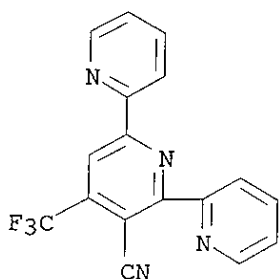
RN 219957-08-1 HCAPLUS  
 CN Manganese, [rel-(1R,2R,3-endo,4S,5S,7-endo,9-syn)-9-hydroxy-3,7-dimethyl-  
 2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dimethanol-  
 .kappa.N3,.kappa.N7]diiodo-, (OC-6-54)- (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

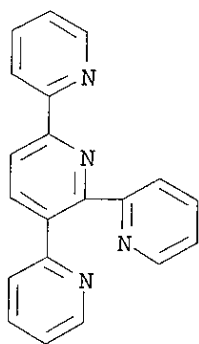
L24 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1998:645924 HCAPLUS  
 DN 129:302540  
 TI A new expedient route to 2,6-diaryl-3-cyano-4-(trifluoromethyl)pyridines  
 AU Yamaguchi, Yoshihiro; Katsuyama, Isamu; Funabiki, Kazumasa; Matsui,  
 Masaki; Shibata, Katsuyoshi  
 CS Department of Chemistry, Faculty of Engineering, Gifu University, Gifu,  
 501-1193, Japan  
 SO Journal of Heterocyclic Chemistry (1998), 35(4), 805-810  
 CODEN: JHTCAD; ISSN: 0022-152X  
 PB HeteroCorporation  
 DT Journal  
 LA English  
 OS CASREACT 129:302540  
 AB 1-Aryl-4,4,4-trifluoro-1,3-butanediones react with .beta.-amino-.beta.-  
 arylacrylonitriles, readily available from acetonitrile and aryl nitriles  
 in the presence of potassium t-butoxide, to afford the corresponding  
 2,6-diaryl-3-cyano-4-(trifluoromethyl)pyridines in moderate to excellent

yields.  
 IT 214546-21-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 RN 214546-21-1 HCAPLUS  
 CN [2,2':6',2''-Terpyridine]-3'-carbonitrile, 4'-(trifluoromethyl)- (9CI)  
 (CA INDEX NAME)

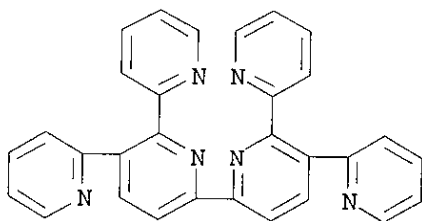


RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

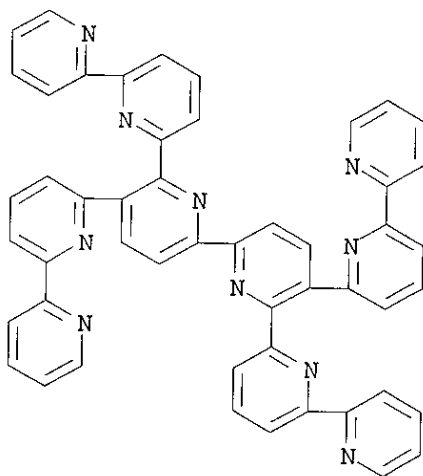
L24 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1998:591586 HCAPLUS  
 DN 129:275821  
 TI A new and simple "LEGO" system for the synthesis of branched  
 oligopyridines  
 AU Pabst, Gunther R.; Schmid, Konrad; Sauer, Jurgen  
 CS Inst. Organische Chemie, Universitat Regensburg, Regensburg, D-93040,  
 Germany  
 SO Tetrahedron Letters (1998), 39(37), 6691-6694  
 CODEN: TELEAY; ISSN: 0040-4039  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 AB The condensation of carboxamidrazones with 1,2-dicarbonyl compds. is the  
 best method for the synthesis of alkyl-, aryl-, or heteroaryl-substituted  
 1,2,4-triazines. These 1,2,4-triazines can be easily transformed into  
 pyridines by [4+2] cycloaddn. with bicyclo[2.2.1]hepta-2,5-diene, followed  
 by [4+2] cycloreversion of nitrogen and cyclopentadiene. This reaction  
 sequence offers a new, simple and general access to branched  
 oligopyridines.  
 IT 213838-02-9P 213838-03-0P 213838-04-1P  
 213838-05-2P 213838-06-3P 213838-07-4P  
 213838-08-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 RN 213838-02-9 HCAPLUS  
 CN 2,2':3',2''-Terpyridine, 6'-(2-pyridinyl)- (9CI) (CA INDEX NAME)



RN 213838-03-0 HCAPLUS  
CN 2,2':6',2'':5'',2'''-Quaterpyridine, 3',6''-di-2-pyridinyl- (9CI) (CA INDEX NAME)

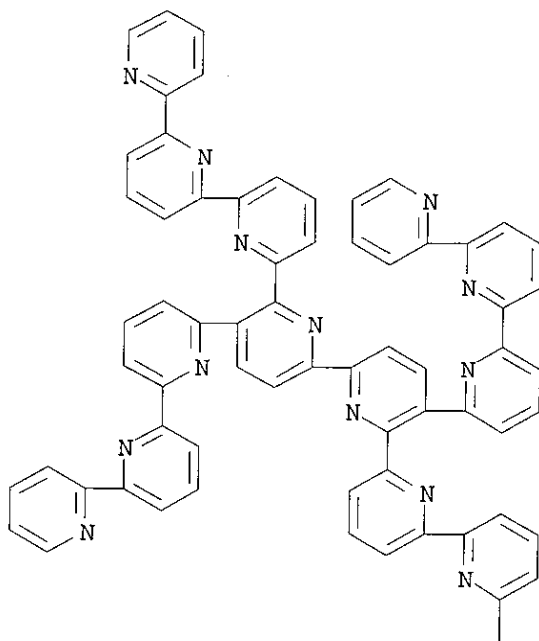


RN 213838-04-1 HCAPLUS  
CN 2,2':6',2'':6'',2''':5''',2''':6''''',2''''-Sexipyridine, 3'',6''''-bis([2,2'-bipyridin]-6-yl)- (9CI) (CA INDEX NAME)

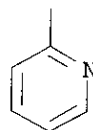


RN 213838-05-2 HCAPLUS  
CN 2,2':6',2'':6'',2''':6''',2''':5''',2''':6''''',2''':6''''',2''''-Octipyridine, 3''',6''''-bis([2,2':6',2''-terpyridin]-6-yl)- (9CI) (CA INDEX NAME)

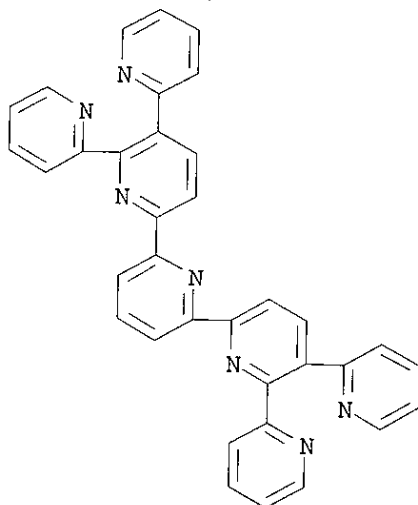
PAGE 1-A



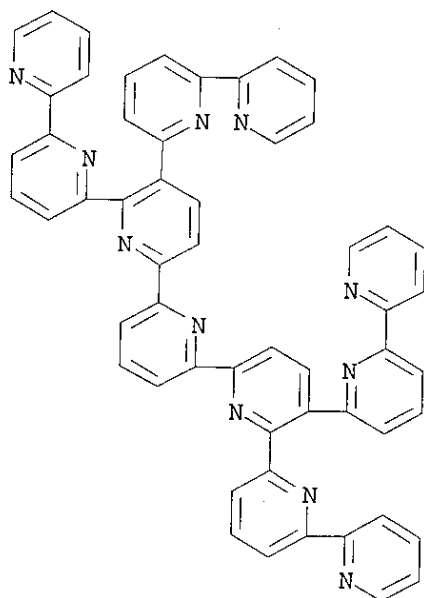
PAGE 2-A



RN 213838-06-3 HCAPLUS  
CN 2,2':6',2'':6'':2''':5''',2''''-Quinquepyridine, 3',6'''-di-2-pyridinyl-  
(9CI) (CA INDEX NAME)

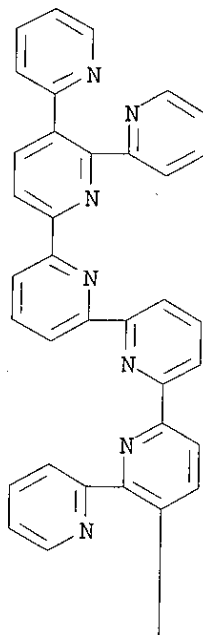


RN 213838-07-4 HCAPLUS  
 CN 2,2':6',2'':6'':2''':6''':2''':5''':2''':6''':2''':6''':3'',6''':bis([2,2'-bipyridin]-6-yl)- (9CI) (CA INDEX NAME)-Septipyridine,

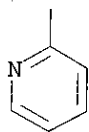


RN 213838-08-5 HCAPLUS  
 CN 2,2':6',2'':6'':2''':6''':2''':5''':2''':6''':2''':6''':3'',6''':di-2-pyridinyl- (9CI) (CA INDEX NAME)-Sexipyridine,

PAGE 1-A



PAGE 2-A



RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L24 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1997:135687 HCAPLUS  
DN 126:219919  
TI The design of a new type of very rigid tetradentate ligand  
AU Comba, Peter; Nuber, Bernhard; Ramlow, Anne  
CS Anorg.-Chem. Inst. Univ., Heidelberg, 69120, Germany  
SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry  
(1997), (3), 347-352  
CODEN: JCOTBI; ISSN: 0300-9246  
PB Royal Society of Chemistry  
DT Journal  
LA English  
AB Mol. mechanics calcns. were used to compute the structural properties of a new type of very rigid tetradentate ligand for tetrahedral coordination geometries. The calcns. indicate that the pendant arms of the disubstituted bispidine (3,7-diazabicyclo[3.3.1]nonane) backbone need to form six-membered chelate rings with the metal to allow a distorted



tetrahedral geometry. Smaller rings lead to five-(trigonal bipyramidal) or six-coordinate (octahedral) transition-metal compds. The quality of these predictions is supported by the exptl. detd. structure of a Co(II) compd. of the ligand with coordinated pyridine substituents (five-membered chelate rings) and an addnl. bidentate nitrate ligand. Comparison of the computed structures with the crystal structure of the Co(II) compd. and with that of a ligand with Me-protected Ph substituents supports the rigidity of the bispidine backbone and indicates that rotation of coordinating side chains around a C-C single bond is the only flexibility in these ligands.

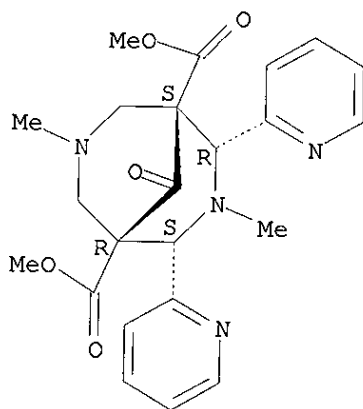
IT 42165-92-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (prepn. and complexation with cobalt)

RN 42165-92-4 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



IT 188033-36-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and crystal structure of)

RN 188033-36-5 HCAPLUS

CN Cobalt(1+), [dimethyl 3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7](nitrate-.kappa.O,.kappa.O')-, (OC-6-43)-, nitrate, monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 188033-34-3

CMF C23 H26 Co N5 O8 . N O3

CM 2

CRN 188033-33-2

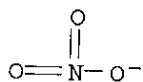
CMF C23 H26 Co N5 O8

CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 14797-55-8  
CMF N O3



IT 188033-34-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(prepn. and mol. structure)

RN 188033-34-3 HCAPLUS

CN Cobalt(1+), [dimethyl 3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7] (nitrate-.kappa.O,.kappa.O')-, (OC-6-43)-, nitrate (9CI) (CA INDEX NAME)

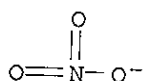
CM 1

CRN 188033-33-2  
CMF C23 H26 Co N5 O8  
CCI CCS

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 14797-55-8  
CMF N O3

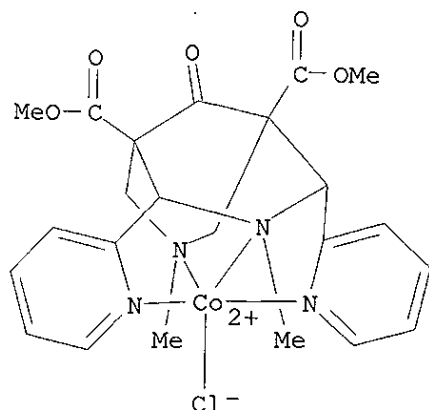


IT 188033-35-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

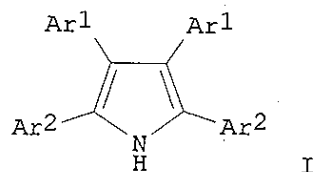
RN 188033-35-4 HCAPLUS

CN Cobalt(1+), chloro[dimethyl 3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, chloride, (TB-5-22)- (9CI) (CA INDEX NAME)



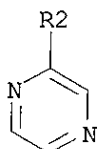
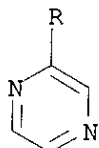
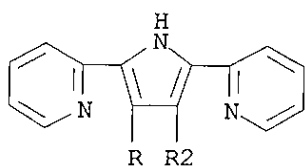
● Cl<sup>-</sup>

L24 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1996:95902 HCAPLUS  
 DN 124:260752  
 TI Preparation of 1H-2,3,4,5-tetraarylpyrroles by oxidation of heterocyclic imine-enamines  
 AU Lehuède, J.; Mettey, Y.; Vierfond, J-M.  
 CS Lab. Chimie Organique, Faculte Medecine Pharmacie, Poitiers, 86005, Fr.  
 SO Synthetic Communications (1996), 26(4), 793-802  
 CODEN: SYNCAV; ISSN: 0039-7911  
 PB Dekker  
 DT Journal  
 LA English  
 OS CASREACT 124:260752  
 GI

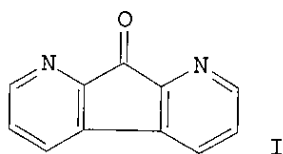


AB Heterocyclic imine-enamines Ar<sub>1</sub>CH:C(NH<sub>2</sub>)Ar<sub>2</sub> (Ar<sub>1</sub> = 2-pyrazinyl, 2-quinoxalinylyl; Ar<sub>2</sub> = Ph, 2-, 4-pyridyl, 2-furyl, 2-thienyl) were prepd. from metalated Me substituted heterocycles Ar<sub>1</sub>Me and arom. nitriles Ar<sub>2</sub>CN and then oxidized with lead tetraacetate to give various tetraarylpyrroles I.  
 IT 175023-85-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of tetraarylpyrroles by oxidn. of heterocyclic imine-enamines)  
 RN 175023-85-5 HCAPLUS  
 CN Pyrazine, 2,2'-(2,5-di-2-pyridinyl-1H-pyrrole-3,4-diyl)bis- (9CI) (CA

INDEX NAME)



L24 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1991:102739 HCAPLUS  
 DN 114:102739  
 TI 1,8-Diazafluorenone and related compounds. A new reagent for the  
 detection of .alpha.-amino acids and latent fingerprints  
 AU Grigg, Ronald; Mongkolaussavaratana, Theeravat; Pounds, C. Anthony;  
 Sivagnanam, Sasikala  
 CS Sch. Chem., Leeds Univ., Leeds, LS2 9JT, UK  
 SO Tetrahedron Letters (1990), 31(49), 7215-18  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 OS CASREACT 114:102739  
 GI



AB 1,8-Diazafluorenone (I) reacts with .alpha.-amino acids and their esters  
 via imine formation to give decarboxylated azomethine ylides and  
 ester-substituted azomethine ylides, resp. In the presence of  
 N-methylmaleimide, these azomethine ylides undergo stereospecific  
 cycloaddn. via endo transition states. Analogs of I give similar  
 cycloadducts. In the absence of dipolarophiles, the .alpha.-amino acids

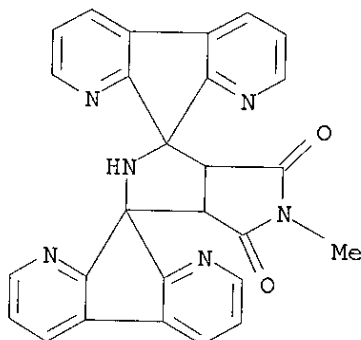
and I give a red fluorescent dye, thus providing a sensitive method for detecting latent fingerprints on paper.

IT 132286-20-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 132286-20-5 HCAPLUS

CN Dispiro[9H-cyclopenta[1,2-b:4,3-b']dipyridine-9,1'(2'H)-pyrrolo[3,4-c]pyrrole-3'(3'aH),9''-[9H]cyclopenta[1,2-b:4,3-b']dipyridine]-4',6'(5'H,6'aH)-dione, 5'-methyl-, cis- (9CI) (CA INDEX NAME)



L24 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 1990:20978 HCAPLUS

DN 112:20978

TI Synthesis, stereochemistry and analgesic activity of 3,7-diazabicyclo[3.3.1]nonan-9-ones and 1,3-diazaadamantan-6-ones

AU Samhammer, Annemarie; Holzgrabe, Ulrike; Haller, Rolf

CS Pharm. Inst., Univ. Kiel, 2300, Fed. Rep. Ger.

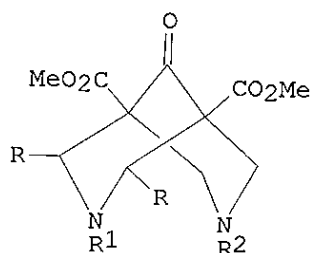
SO Archiv der Pharmazie (Weinheim, Germany) (1989), 322(9), 551-5  
CODEN: ARPMAS; ISSN: 0365-6233

DT Journal

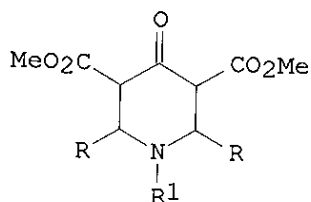
LA German

OS CASREACT 112:20978

GI



I



II

AB The 1,3-diazaadamantan-6-ones I (R = 2-pyridyl, 6-methyl-2-pyridyl, Ph, 3,4,5-Me3C6H2, R1R2 = CH2) are synthesized from the 4-piperidones II. Different conditions lead to stereoisomeric structures. The 3,7-diazabicyclo[3.3.1]nonan-9-ones I (R1 = H, Me, R2 = Me, cyclopropylmethyl, R = same) show similar geometrical isomerism. Whereas

the diazabicyclononanes show opioid-like effects, I (R = 2-pyridyl, R1R2 = CH2) is a peripheral analgesic.

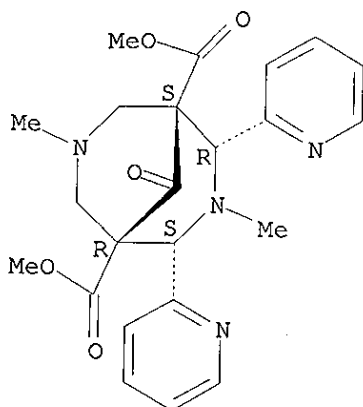
IT 42165-92-4P 97323-45-0P 124189-56-6P  
124189-57-7P 124189-58-8P 124263-91-8P  
124263-92-9P 124263-93-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 42165-92-4 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

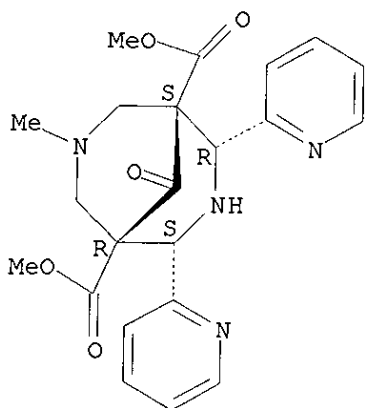
Relative stereochemistry.



RN 97323-45-0 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-methyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4R,5S)-rel- (9CI) (CA INDEX NAME)

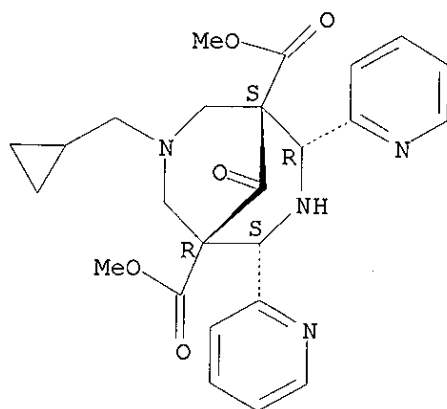
Relative stereochemistry.



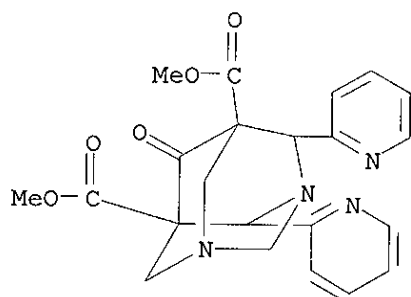
RN 124189-56-6 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 7-(cyclopropylmethyl)-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo)- (9CI) (CA INDEX NAME)

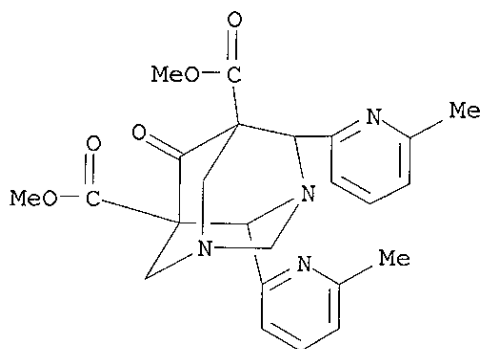
Relative stereochemistry.



RN 124189-57-7 HCAPLUS  
 CN 1,3-Diazatricyclo[3.3.1.13,7]decane-5,7-dicarboxylic acid,  
 6-oxo-4,10-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA INDEX  
 NAME)



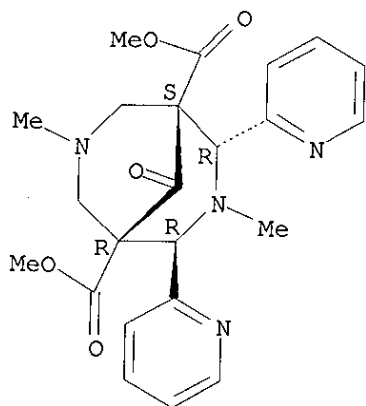
RN 124189-58-8 HCAPLUS  
 CN 1,3-Diazatricyclo[3.3.1.13,7]decane-5,7-dicarboxylic acid,  
 4,10-bis(6-methyl-2-pyridinyl)-6-oxo-, dimethyl ester, stereoisomer (9CI)  
 (CA INDEX NAME)



RN 124263-91-8 HCAPLUS

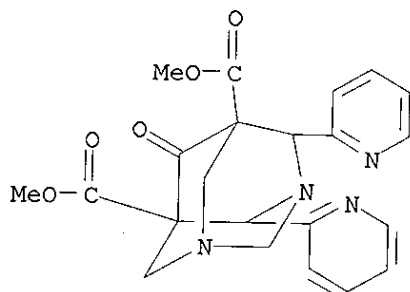
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 3,7-dimethyl-9-oxo-2,4-di-2-pyridinyl-, dimethyl ester, (1R,2S,4S,5S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 124263-92-9 HCAPLUS

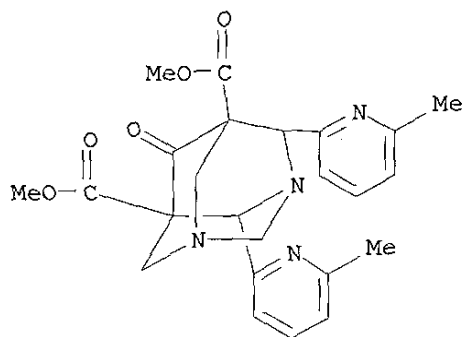
CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid, 6-oxo-4,10-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA INDEX NAME)



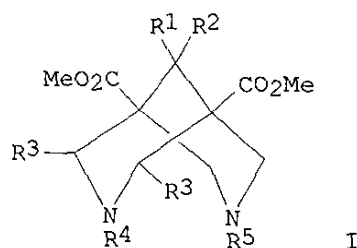
RN 124263-93-0 HCAPLUS

CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid, 4,10-bis(6-methyl-2-pyridinyl)-6-oxo-, dimethyl ester, stereoisomer (9CI) (CA INDEX NAME)



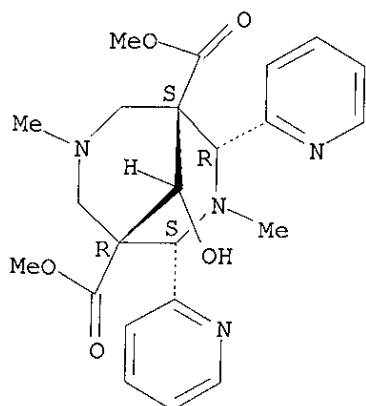


L24 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1990:20977 HCAPLUS  
 DN 112:20977  
 TI Reductions of 3,7-diazabicyclo[3.3.1]nonan-9-ones and corresponding  
 1,3-diazaadamantan-6-ones  
 AU Samhammer, Annemarie; Holzgrabe, Ulrike; Haller, Rolf  
 CS Pharm. Inst., Univ. Kiel, Kiel, 2300, Fed. Rep. Ger.  
 SO Archiv der Pharmazie (Weinheim, Germany) (1989), 322(9), 545-50  
 CODEN: ARPMAS; ISSN: 0365-6233  
 DT Journal  
 LA German  
 OS CASREACT 112:20977  
 GI

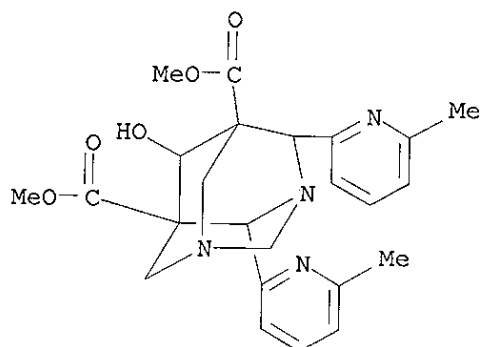


AB The title compds. I (R1R2 = O, R3 = 2-pyridyl, Ph, 6-methyl-2-pyridyl, R4 = H, Me, R5 = Me, Et; R4R5 = CH2, resp.) are reduced by NaBH4 and LiAlH4 in various solvents. The reasons for the proportion of the epimeric alcs. are discussed. The reaction of I (R1R2 = O, R3 = Ph, R4R5 = CH2) with MeMgI yields the ring-opened N-alkylated product.  
 IT 36332-87-3P 124189-60-2P 124263-95-2P  
 124263-96-3P 124263-97-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and acetylation of, with acetic anhydride)  
 RN 36332-87-3 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-3,7-dimethyl-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

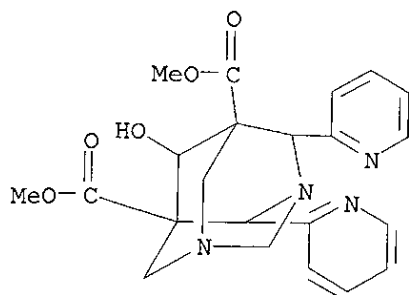
Relative stereochemistry.



RN 124189-60-2 HCAPLUS  
 CN 1,3-Diazatricyclo[3.3.1.13,7]decane-5,7-dicarboxylic acid,  
 6-hydroxy-8,9-bis(6-methyl-2-pyridinyl)-, dimethyl ester, stereoisomer  
 (9CI) (CA INDEX NAME)

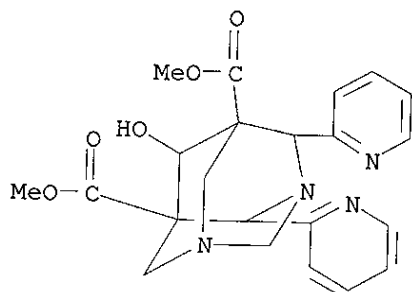


RN 124263-95-2 HCAPLUS  
 CN 1,3-Diazatricyclo[3.3.1.13,7]decane-5,7-dicarboxylic acid,  
 6-hydroxy-8,9-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA  
 INDEX NAME)

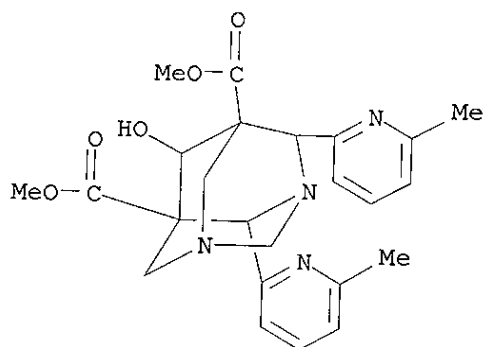


RN 124263-96-3 HCAPLUS

CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid,  
6-hydroxy-8,9-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA  
INDEX NAME)



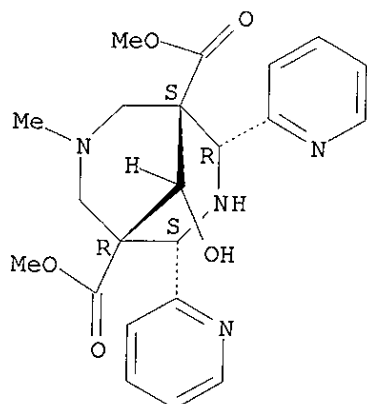
RN 124263-97-4 HCAPLUS  
CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid,  
6-hydroxy-8,9-bis(6-methyl-2-pyridinyl)-, dimethyl ester, stereoisomer  
(9CI) (CA INDEX NAME)



IT 36332-84-0P 97323-50-7P 124189-60-2DP, boron  
complex 124189-62-4P 124189-64-6P 124189-65-7P  
124263-95-2DP, boron complex 124263-96-3DP, boron  
complex 124263-99-6P 124264-00-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 36332-84-0 HCAPLUS  
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-methyl-  
2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI) (CA INDEX  
NAME)

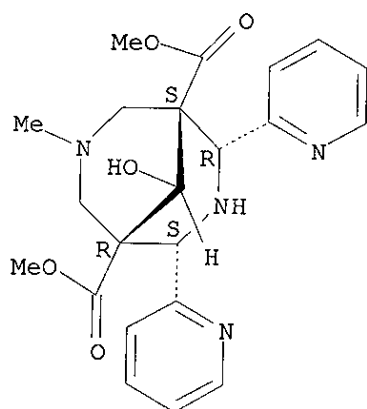
Relative stereochemistry.



RN 97323-50-7 HCAPLUS

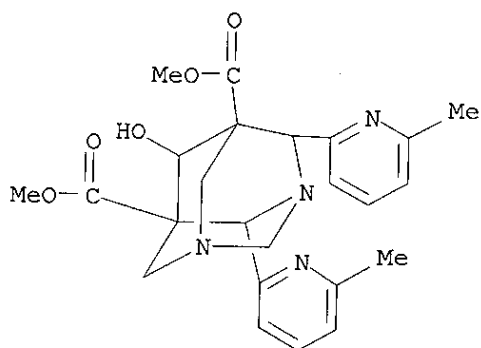
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-methyl-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,anti)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



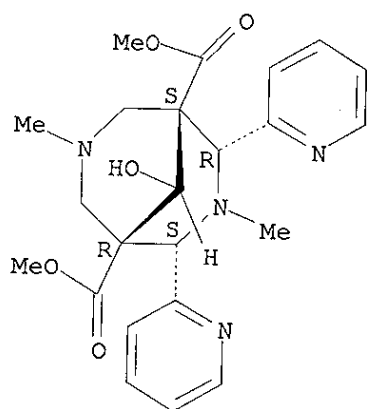
RN 124189-60-2 HCAPLUS

CN 1,3-Diazatricyclo[3.3.1.13,7]decane-5,7-dicarboxylic acid, 6-hydroxy-8,9-bis(6-methyl-2-pyridinyl)-, dimethyl ester, stereoisomer (9CI) (CA INDEX NAME)

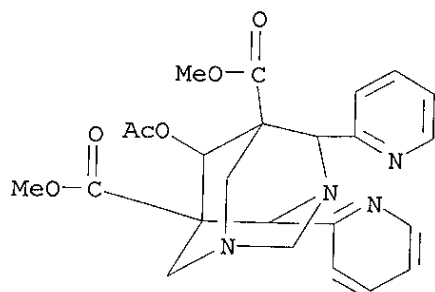


RN 124189-62-4 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-3,7-dimethyl-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,anti)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

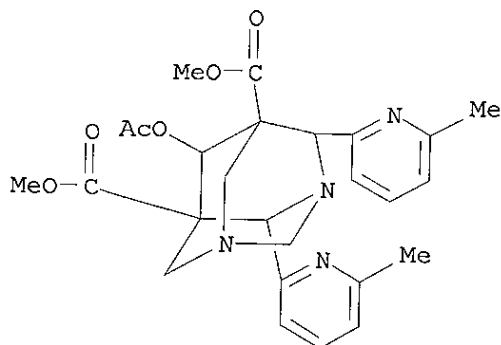


RN 124189-64-6 HCAPLUS  
 CN 1,3-Diazatricyclo[3.3.1.1.3,7]decane-5,7-dicarboxylic acid, 6-(acetyloxy)-8,9-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA INDEX NAME)

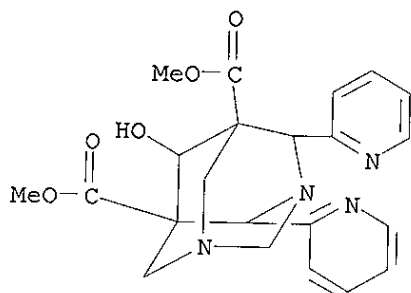


RN 124189-65-7 HCAPLUS

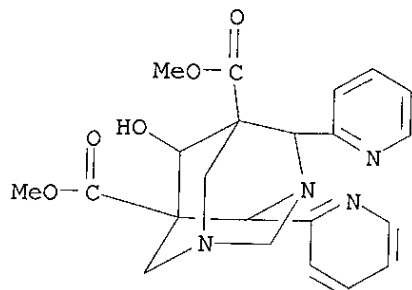
CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid,  
6-(acetyloxy)-8,9-bis(6-methyl-2-pyridinyl)-, dimethyl ester, stereoisomer  
(9CI) (CA INDEX NAME)



RN 124263-95-2 HCAPLUS  
CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid,  
6-hydroxy-8,9-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA  
INDEX NAME)

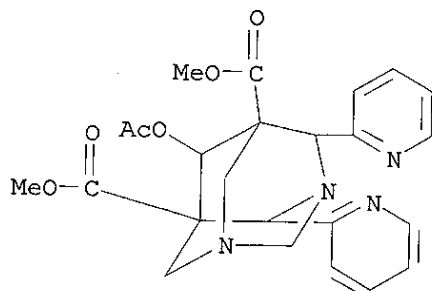


RN 124263-96-3 HCAPLUS  
CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid,  
6-hydroxy-8,9-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA  
INDEX NAME)

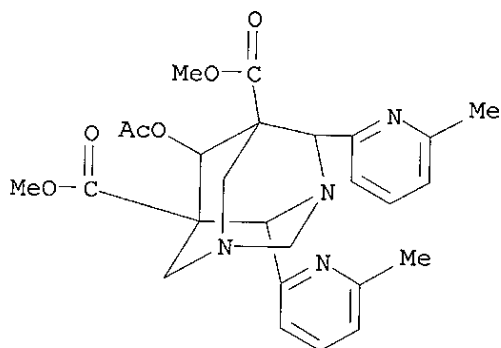


RN 124263-99-6 HCAPLUS  
CN 1,3-Diazatricyclo[3.3.1.1<sup>3,7</sup>]decane-5,7-dicarboxylic acid,  
6-(acetyloxy)-8,9-di-2-pyridinyl-, dimethyl ester, stereoisomer (9CI) (CA

INDEX NAME)

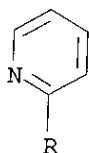
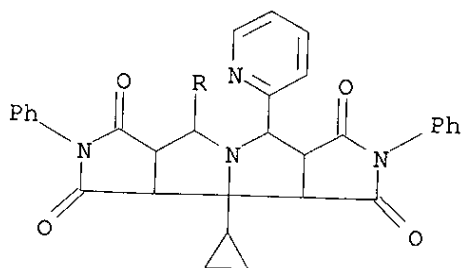


RN 124264-00-2 HCAPLUS  
 CN 1,3-Diazatricyclo[3.3.1.1.3,7]decane-5,7-dicarboxylic acid,  
 6-(acetyloxy)-8,9-bis(6-methyl-2-pyridinyl)-, dimethyl ester, stereoisomer  
 (9CI) (CA INDEX NAME)

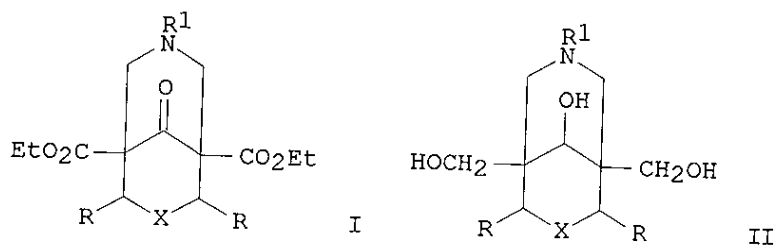


L24 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1989:38390 HCAPLUS  
 DN 110:38390  
 TI X:Y-ZH Systems as potential 1,3-dipoles. part 16. Cyclopropyl-substituted  
 azomethine ylides as mechanistic probes in 1,3-dipolar cycloaddition  
 reactions  
 AU Grigg, Ronald; Armstrong, William P.  
 CS Chem. Dep., Queen's Univ., Belfast, BT9 5AG, UK  
 SO Tetrahedron (1988), 44(5), 1523-34  
 CODEN: TETRAB; ISSN: 0040-4020  
 DT Journal  
 LA English  
 OS CASREACT 110:38390  
 AB Cycloaddns. involving the 1,2-prototropic route and the decarboxylative  
 route to azomethine ylides were studied with cyclopropyl substituents  
 located on one or both carbon atoms of the azomethine ylides and in  
 several instances in the dipolarophile. Cycloadducts were obtained in  
 good yield with no evidence of biradical intermediates, i.e., no products  
 arising from cyclopropyl radical .dblharw. but-3-enyl radical  
 rearrangements were detected.  
 IT 118328-34-OP  
 RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of)  
 RN 118328-34-0 HCAPLUS  
 CN 1H-Dipyrrolo[3,4-a:3',4'-f]pyrrolizine-1,3,4,6(2H,3aH,5H)-tetrone,  
 3b-cyclopropylhexahydro-2,5-diphenyl-7,9-di-2-pyridinyl-,  
 (3a.alpha.,3b.alpha.,3c.alpha.,6a.alpha.,7.beta.,9.beta.,9a.alpha.)- (9CI)  
 (CA INDEX NAME)



L24 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1985:541860 HCAPLUS  
 DN 103:141860  
 TI Reductions of heterocyclic 9-oxobicyclo[3.3.1]nonane-1,5-dicarboxylates  
 with complex metal hydrides yielding trivalent alcohols  
 AU Haller, Rolf; Ashauer, Ulrike  
 CS Pharm. Inst., Univ. Kiel, Kiel, 2300/1, Fed. Rep. Ger.  
 SO Archiv der Pharmazie (Weinheim, Germany) (1985), 318(6), 525-31  
 CODEN: ARPMAS; ISSN: 0365-6233  
 DT Journal  
 LA German  
 OS CASREACT 103:141860  
 GI



AB The heterocyclic bicyclononanones I ( $X = NH$ ,  $R = 2$ -pyridyl,  $R1 = Me$ ;  $X = O$ ,  $R = Ph$ ,  $R1 = Me$ ,  $PhCH_2$ ,  $H_2C:CHCH_2$ ;  $X = S$ ,  $R = 2$ -pyridyl,  $R1 = Me$ ) were reduced with  $LiAlH_4$  to give epimeric trivalent alcs. II, whose



configurations, NMR, and IR spectra were discussed. The alcs. were converted to their O-triacetyl derivs.

IT 98450-22-7P

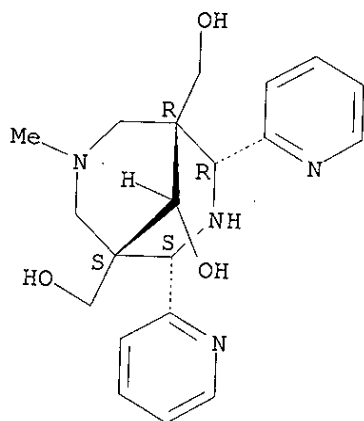
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and NMR of)

RN 98450-22-7 HCAPLUS

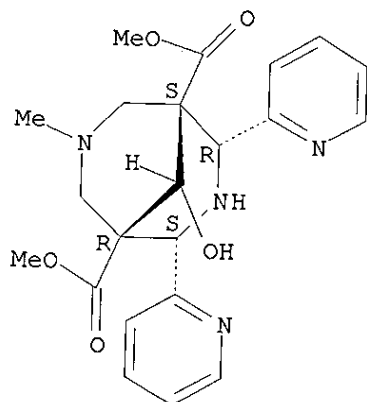
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dimethanol, 9-hydroxy-7-methyl-2,4-di-2-pyridinyl-, (endo,endo,syn)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



- L24 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1985:453976 HCAPLUS  
 DN 103:53976  
 TI Reductions of substituted 3,7-diaza- and 3-thia-7-azabicyclo[3.3.1]nonan-9-ones with sodium borohydride  
 AU Haller, Rolf; Ashauer, Ulrike  
 CS Pharm. Inst., Univ. Kiel, Kiel, 2300/1, Fed. Rep. Ger.  
 SO Archiv der Pharmazie (Weinheim, Germany) (1985), 318(5), 405-10  
 CODEN: ARPMAS; ISSN: 0365-6233  
 DT Journal  
 LA German  
 OS CASREACT 103:53976  
 GI For diagram(s), see printed CA Issue.  
 AB Redn. of bicyclononanones I (X = NH, R1 = Ph, 2-pyridyl, R2 = Me; X = NH, R1 = 2-pyridyl, R2 = CH2Ph; X = S, R1 = 2-pyridyl, R2 = Me) with NaBH4 in aq. dioxane was highly stereoselective, to give the axial bicyclononanols II (R3 = OH, R4 = H). In MeOH, NaBH4 redn. gave mixts. of epimers II (R3 = OH, R4 = H; R3 = H, R4 = OH).  
 IT 36332-84-0P 36332-85-1P 97323-50-7P  
 97323-52-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, by redn. of oxo analog with sodium borohydride)  
 RN 36332-84-0 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-methyl-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

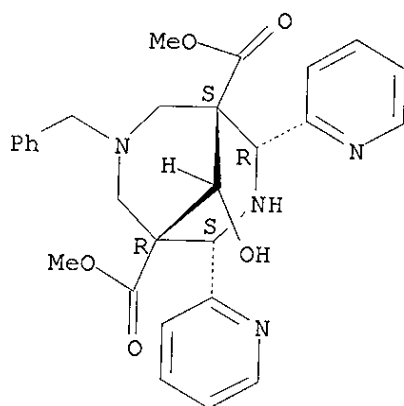
Relative stereochemistry.



RN 36332-85-1 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-(phenylmethyl)-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI)  
(CA INDEX NAME)

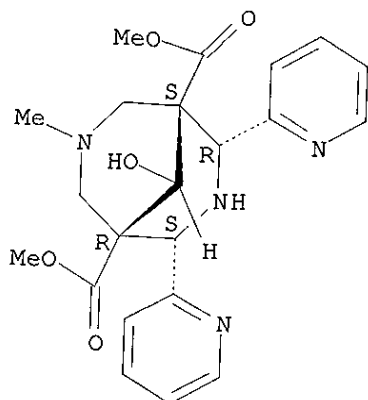
Relative stereochemistry.



RN 97323-50-7 HCAPLUS

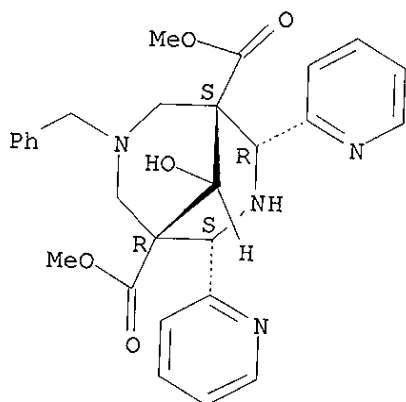
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-methyl-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,anti)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 97323-52-9 HCAPLUS  
 CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-(phenylmethyl)-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,anti)-(9CI) (CA INDEX NAME)

Relative stereochemistry.



L24 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1972:3821 HCAPLUS  
 DN 76:3821  
 TI Substituted 3,7-diazabicyclo[3.3.1]nonan-9-ols  
 AU Haller, R.; Unholzer, H.  
 CS Pharm. Inst., Univ. Freiburg, Freiburg/Breisgau, Fed. Rep. Ger.  
 SO Archiv der Pharmazie und Berichte der Deutschen Pharmazeutischen Gesellschaft (1971), 304(9), 654-9  
 CODEN: APBDAJ; ISSN: 0376-0367  
 DT Journal  
 LA German  
 GI For diagram(s), see printed CA Issue.  
 AB The title compds. (I, R = H or Me, R1 = 2- or 3-pyridyl, R2 = Me or Et, R3 = Me or CH2Ph) were prep'd. by redn. of the corresponding 9-oxo compds. with NaBH4 at very high stereoselectivity. The stereochemistry of the

methoiodide of I (R = H, R1 = 2-pyridyl, R2 = R3 = Me) was elucidated by nuclear Overhauser effect measurements.

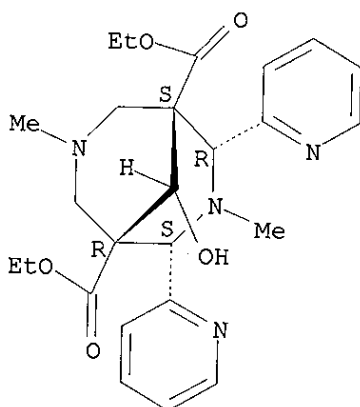
IT 36301-17-4P 36301-18-5P 36332-84-0P  
36332-85-1P 36332-86-2P 36332-87-3P  
36332-88-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 36301-17-4 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-3,7-dimethyl-2,4-di-2-pyridinyl-, diethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

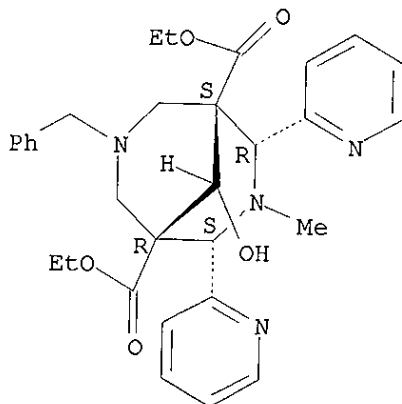
Relative stereochemistry.



RN 36301-18-5 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-3-methyl-7-(phenylmethyl)-2,4-di-2-pyridinyl-, diethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

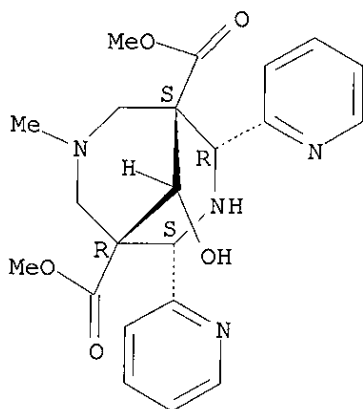


RN 36332-84-0 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-methyl-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

NAME)

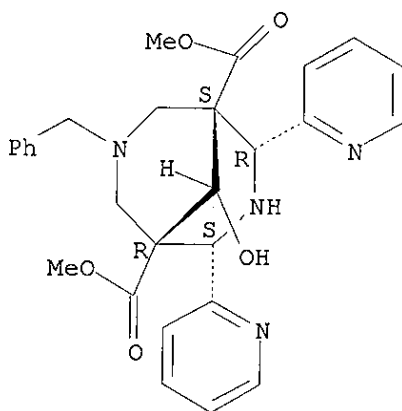
Relative stereochemistry.



RN 36332-85-1 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-(phenylmethyl)-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI)  
(CA INDEX NAME)

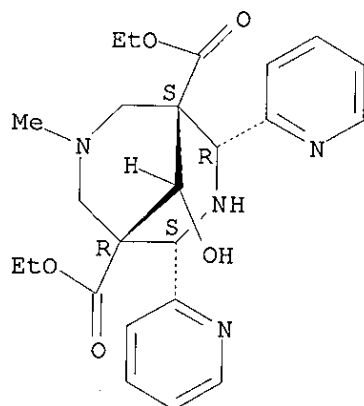
Relative stereochemistry.



RN 36332-86-2 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-7-methyl-2,4-di-2-pyridinyl-, diethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

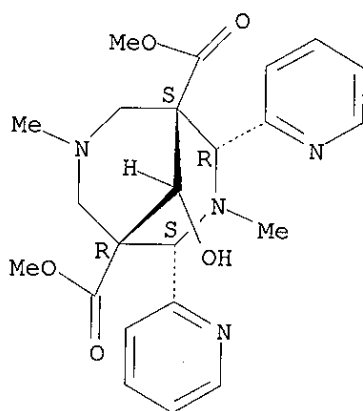
Relative stereochemistry.



RN 36332-87-3 HCAPLUS

CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-3,7-dimethyl-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

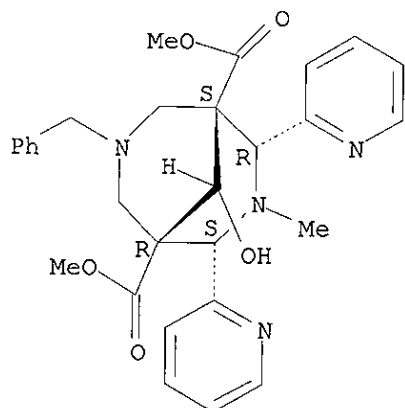
Relative stereochemistry.



RN 36332-88-4 HCAPLUS

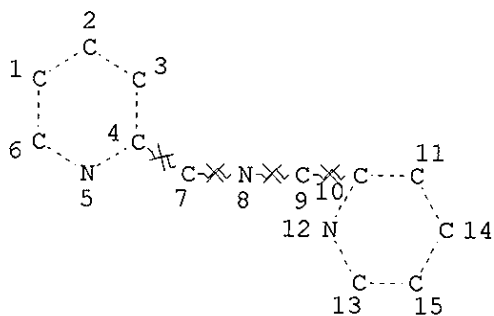
CN 3,7-Diazabicyclo[3.3.1]nonane-1,5-dicarboxylic acid, 9-hydroxy-3-methyl-7-(phenylmethyl)-2,4-di-2-pyridinyl-, dimethyl ester, (endo,endo,syn)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



=> D QUE  
L3

STR



~~Broad structure search~~  
~~combined with text~~

NODE ATTRIBUTES:

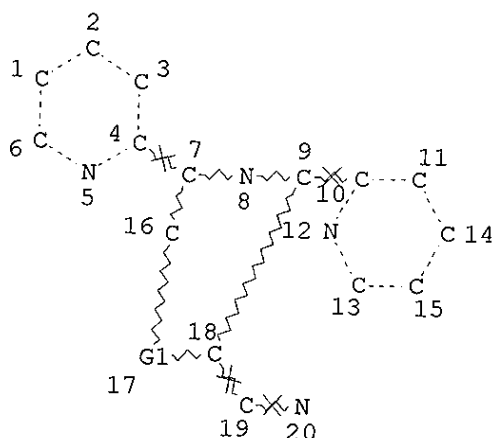
NSPEC IS RC AT 7  
NSPEC IS RC AT 8  
NSPEC IS RC AT 9  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L5 20763 SEA FILE=REGISTRY SSS FUL L3  
L8 STR



*Structure search  
combined with  
CLO<sub>4</sub> - claim 20*

REP G1=(0-3) C  
NODE ATTRIBUTES:  
NSPEC IS RC AT 19  
NSPEC IS RC AT 20  
DEFAULT MLEVEL IS ATOM  
MLEVEL IS CLASS AT 16 18  
DEFAULT ECLEVEL IS LIMITED  
ECOUNT IS UNLIMITED AT 16 18

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE  
L11 293 SEA FILE=REGISTRY SUB=L5 SSS FUL L8  
L13 43 SEA FILE=HCAPLUS ABB=ON L11  
L14 26 SEA FILE=HCAPLUS ABB=ON L13(L) (PREP OR IMF OR SPN)/RL  
L15 4 SEA FILE=HCAPLUS ABB=ON L14 AND BLEACH?  
L22 15 SEA FILE=REGISTRY ABB=ON L11 AND CLO<sub>4</sub>  
L23 5 SEA FILE=HCAPLUS ABB=ON L22  
L24 22 SEA FILE=HCAPLUS ABB=ON L14 NOT L15  
L25 2 SEA FILE=HCAPLUS ABB=ON (L23 OR L24 OR L15) NOT (L24 OR L15)

=> D L25 BIB ABS HITSTR

*Priority*

L25 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2003:11253 HCAPLUS  
DN 138:311811  
TI Structural variation in transition-metal bispidine compounds  
AU Comba, Peter; Kerscher, Marion; Merz, Michael; Muller, Vera; Pritzkow, Hans; Remenyi, Rainer; Schiek, Wolfgang; Xiong, Yun  
CS Anorganisch-Chemisches Institut Universität Heidelberg, Heidelberg, 69120, Germany  
SO Chemistry--A European Journal (2002), 8(24), 5750-5760  
CODEN: CEUJED; ISSN: 0947-6539  
PB Wiley-VCH Verlag GmbH & Co. KGaA  
DT Journal  
LA English  
AB The exptl. detd. mol. structures of 40 transition metal complexes with the



tetradentate bispyridine-substituted bispidone ligand, 2,4-bis(2-pyridine)-3,7-diazabicyclo[3.3.1]nonane-9-one [M(bisp)XYZ]<sub>n</sub>+; (M = CrIII, MnII, FeII, CoII, CuII, CuI, ZnII; X, Y, Z = mono- or bidentate co-ligands; penta-, hexa- or heptacoordinate complexes) were characterized in detail, supported by forcefield and DFT calcns. While the bispidone ligand is very rigid (N3.tplbond.N7 distance = 2.933 .+-. 0.025 .ANG.), it tolerates a large range of metal-donor bond lengths (2.07 .ANG. < .SIGMA.(M-N)/4 < 2.35 .ANG.). Of particular interest is the ratio of the bond lengths between the metal center and the two tertiary amine donors (0.84 .ANG. < M-N3/M-N7 < 1.05 .ANG.) and the fact that, in terms of this ratio there seem to be two clusters with M-N3 < M-N7 and M-N3 .gtoreq. M-N7. Calcns. indicate that the two structural types are close to degenerate, and the structural form therefore depends on the metal ion, the no. and type of co-ligands, as well as structural variations of the bispidone ligand backbone. Tuning of the structures is of importance since the structurally differing complexes have very different stabilities and reactivities. Crystallog. data are given for 15 complexes.

IT 510719-36-5

RL: PRP (Properties)  
(crystal structure of)

RN 510719-36-5 HCAPLUS

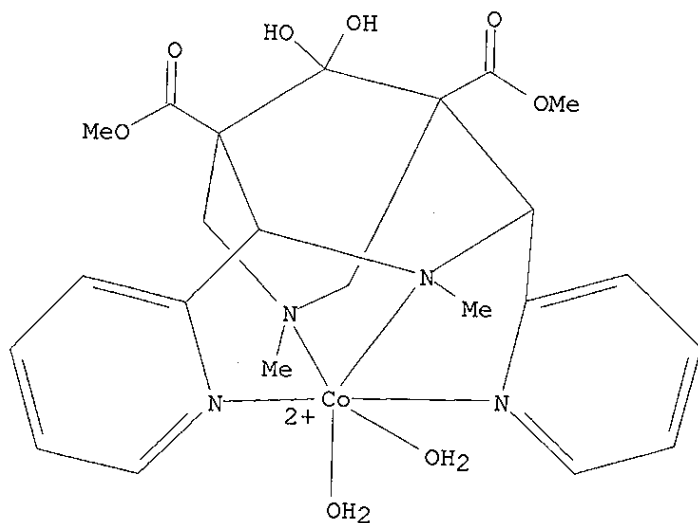
CN Cobalt(2+), diaqua[dimethyl 9,9-dihydroxy-3,7-dimethyl-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]-, (OC-6-43)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 510719-35-4

CMF C23 H32 Co N4 O8

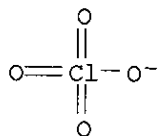
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



IT 510719-23-0 510719-49-0

RL: PRP (Properties)

(crystal structure of mixed crystal contg.)

RN 510719-23-0 HCAPLUS

CN Manganese(2+), bis(2,4-pentanedionato-.kappa.O,.kappa.O')[.mu.-[rel-tetramethyl (1R,1'R,5S,5'S,6R,6R',8S,8'S)-3,3'-(1,2-ethanediyl)bis[9-hydroxy-9-methoxy-7-methyl-6,8-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7]]]di-, stereoisomer, diperchlorate, compd. with methanol (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1

CMF C H4 O

H<sub>3</sub>C-OH

CM 2

CRN 510719-22-9

CMF C58 H72 Mn2 N8 O16 . 2 Cl O4

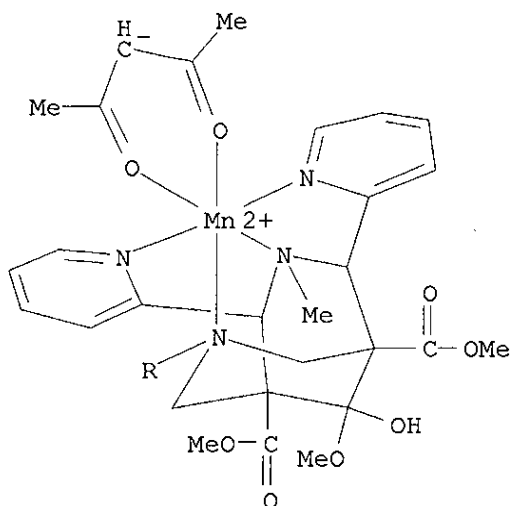
CM 3

CRN 510719-21-8

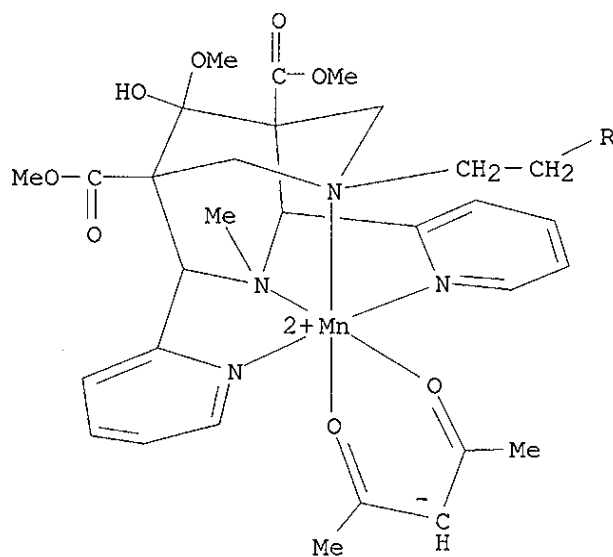
CMF C58 H72 Mn2 N8 O16

CCI CCS

PAGE 1-A



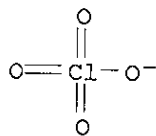
PAGE 2-A



CM 4

CRN 14797-73-0

CMF Cl O4



RN 510719-49-0 HCAPLUS  
 CN Manganese(2+), bis(2,4-pentanedionato-.kappa.O,.kappa.O') [.mu.-  
 [tetramethyl 3,3'-(1,2-ethanediyl)bis[9,9-dihydroxy-7-methyl-6,8-di(2-  
 pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]]]di-, diperchlorate, compd. with methanol (1:2) (9CI)  
 (CA INDEX NAME)

CM 1

CRN 67-56-1  
 CMF C H4 O

H<sub>3</sub>C-OH

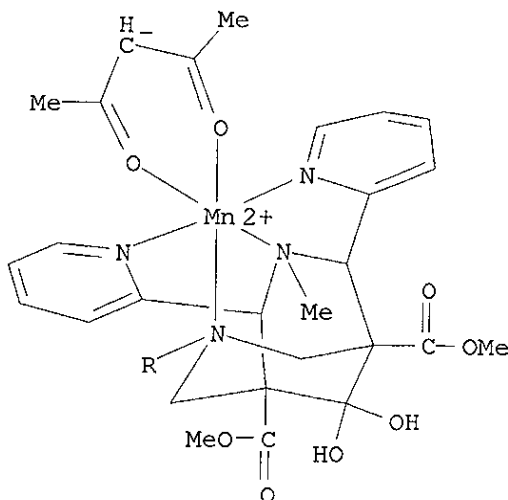
CM 2

CRN 510719-48-9  
 CMF C56 H68 Mn2 N8 O16 . 2 Cl O4

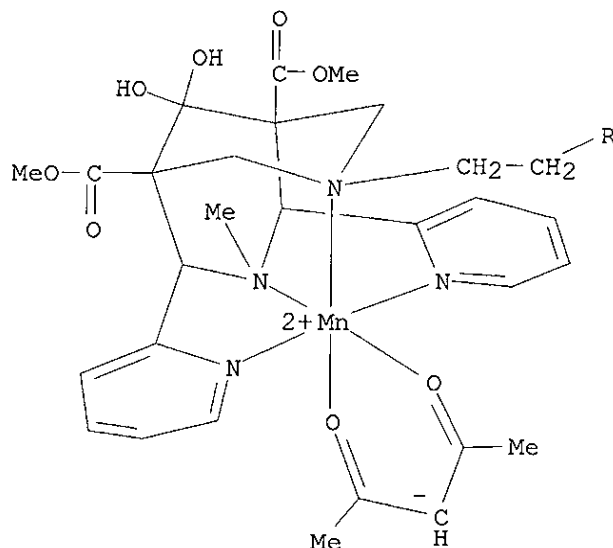
CM 3

CRN 510719-47-8  
 CMF C56 H68 Mn2 N8 O16  
 CCI CCS

PAGE 1-A



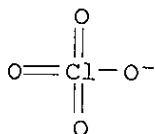
PAGE 2-A



CM 4

CRN 14797-73-0

CMF Cl 04



RE.CNT 83 THERE ARE 83 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=>

=> D L25 BIB ABS HITSTR 2

L25 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:8099 HCAPLUS

DN 134:322590

TI Structural studies on dicopper(ii) compounds with catechol oxidase activity

AU Borzel, Heidi; Comba, Peter; Pritzkow, Hans

CS ~~Anorganisch-Chemisches~~ Institut, Universitat Heidelberg, Heidelberg, D-69120, Germany

SO Chemical Communications (Cambridge) (2001), (1), 97-98

CODEN: CHCOFS; ISSN: 1359-7345

*Priority*

*applicant*

PB Royal Society of Chemistry

DT Journal

LA English

AB The x-ray crystal structures of three low mol. wt. models of catechol oxidase with three different coordination modes are reported; and the compd. with a bridging catecholate is shown to be the catalytically most active form.

IT 337359-98-5 337360-03-9

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)  
(structural studies on dicopper(ii) compds. with catechol oxidase activity)

RN 337359-98-5 HCAPLUS

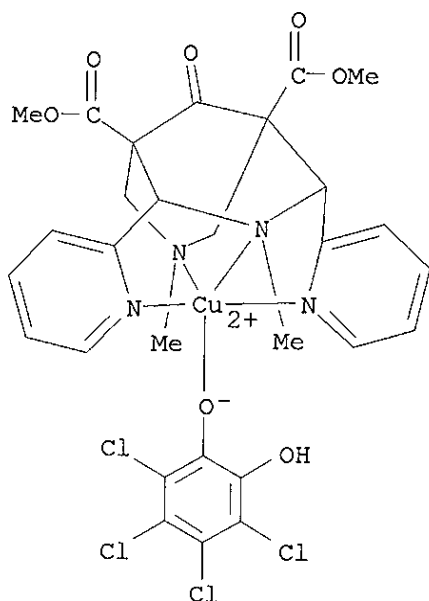
CN Copper(1+), [rel-(1R,2S,3R,4R,5S,7R)-dimethyl 3,7-dimethyl-9-oxo-2,4-di(2-pyridinyl-.kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-.kappa.N3,.kappa.N7] (3,4,5,6-tetrachloro-1,2-benzenediolato-.kappa.O)-, (SP-5-32)-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 337359-97-4

CMF C29 H27 Cl4 Cu N4 O7

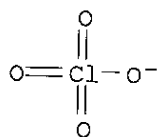
CCI CCS



CM 2

CRN 14797-73-0

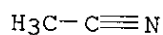
CMF Cl O4



RN 337360-03-9 HCAPLUS  
 CN Copper(2+), [.mu.-[3,4,5,6-tetrachloro-1,2-benzenediolato(2-)-  
 .kappa.O:.kappa.O']][.mu.-[tetramethyl rel-(1R,1'R,3R,3'R,5S,5'S,6R,6'R,7R  
 ,7'R,8S,8'S)-3,3'-(1,3-propanediyl)bis[7-methyl-9-oxo-6,8-di(2-pyridinyl-  
 .kappa.N)-3,7-diazabicyclo[3.3.1]nonane-1,5-dicarboxylate-  
 .kappa.N3,.kappa.N7]]di-, stereoisomer, diperchlorate, compd. with  
 acetonitrile (1:1), trihydrate (9CI) (CA INDEX NAME)

CM 1

CRN 75-05-8  
 CMF C2 H3 N

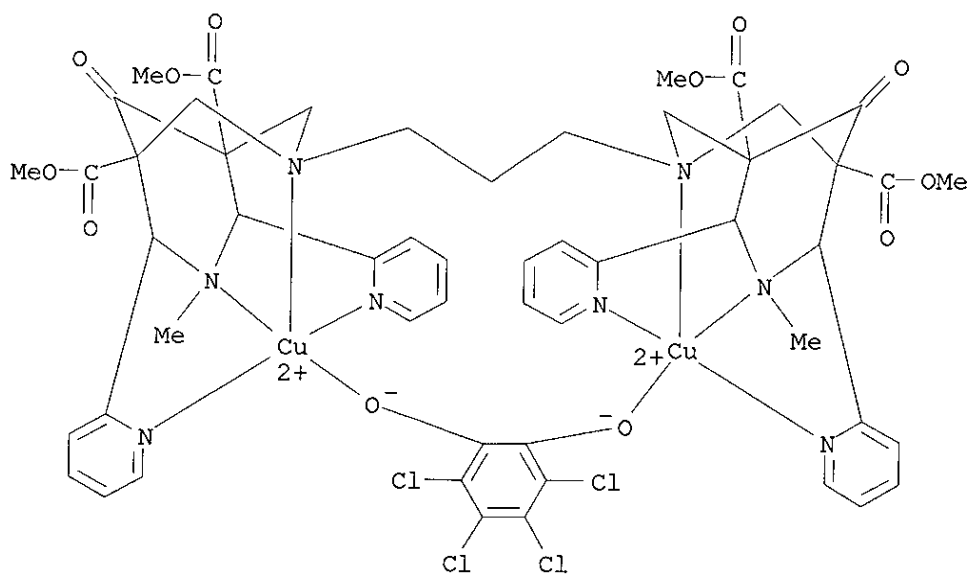


CM 2

CRN 337360-02-8  
 CMF C53 H52 Cl4 Cu2 N8 O12 . 2 Cl O4

CM 3

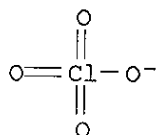
CRN 337360-01-7  
 CMF C53 H52 Cl4 Cu2 N8 O12  
 CCI CCS



CM 4

CRN 14797-73-0

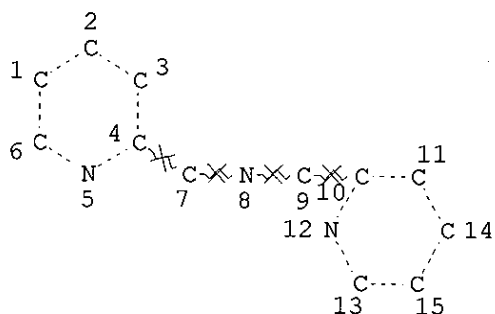
CMF Cl O4



RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> D QUE  
L3

STR



*Broad search  
Combined with  
Teft*

NODE ATTRIBUTES:

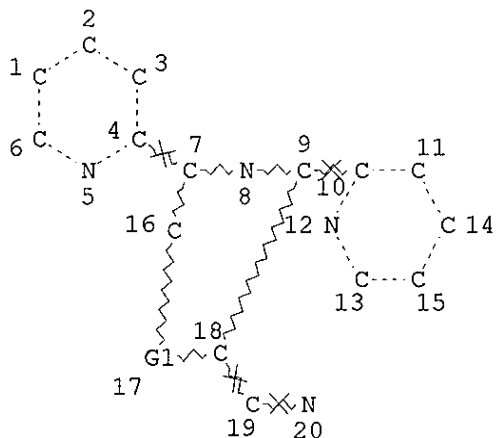
NSPEC IS RC AT 7



NSPEC IS RC AT 8  
 NSPEC IS RC AT 9  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE  
 L5 20763 SEA FILE=REGISTRY SSS FUL L3  
 L8 STR



REP G1=(0-3) C  
 NODE ATTRIBUTES:  
 NSPEC IS RC AT 19  
 NSPEC IS RC AT 20  
 DEFAULT MLEVEL IS ATOM  
 MLEVEL IS CLASS AT 16 18  
 DEFAULT ECLEVEL IS LIMITED  
 ECOUNT IS UNLIMITED AT 16 18

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE  
 L11 293 SEA FILE=REGISTRY SUB=L5 SSS FUL L8  
 L13 43 SEA FILE=HCAPLUS ABB=ON L11  
 L14 26 SEA FILE=HCAPLUS ABB=ON L13(L) (PREP OR IMF OR SPN)/RL  
 L16 5142 SEA FILE=HCAPLUS ABB=ON L5  
 L17 68 SEA FILE=HCAPLUS ABB=ON L16(L) BLEACH?  
 L18 43 SEA FILE=HCAPLUS ABB=ON L17(L) (LIGAND? OR COMPLEX?)  
 L19 31 SEA FILE=HCAPLUS ABB=ON L18(L) (PREP OR IMF OR SPN OR RCT OR RACT)/RL  
 L20 30 SEA FILE=HCAPLUS ABB=ON L19 AND (CAT/RL OR CATALY?)  
 L22 15 SEA FILE=REGISTRY ABB=ON L11 AND CLO4  
 L23 5 SEA FILE=HCAPLUS ABB=ON L22  
 L26 27 SEA FILE=HCAPLUS ABB=ON L20 NOT (L14 OR L23)

=> SEL HIT RN 1-27

E1 THROUGH E117 ASSIGNED

=> D L26 BIB ABS HITIND FHITSTR 1-27

*Printed only one hit structure per record*

L26 ANSWER 1 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2003:511444 HCAPLUS

DN 139:87012

TI Support-fixed bleaching **catalyst** complex compounds suitable as **catalysts** for peroxide compounds

IN Gentshev, Pavel; Doering, Steve; Breyer, Jacques; Machin, Antonio

PA Henkel Kommanditgesellschaft Auf Aktien, Germany

SO PCT Int. Appl., 133 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003054128	A1	20030703	WO 2002-EP14290	20021216
	W: AU, BR, BY, CA, CN, DZ, HU, ID, IL, IN, JP, KR, MX, NO, NZ, PL, RO, RU, SG, UA, US, UZ, VN, YU, ZA				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR				
	DE 10163331	A1	20030710	DE 2001-10163331	20011221
PRAI	DE 2001-10163331	A	20011221		
AB	The invention relates to support-fixed bleaching <b>catalyst</b> (s) suitable for the <b>catalysis</b> of peroxide compds., characterized in that the support-fixed bleaching <b>catalyst</b> (s) is/are covalently bonded to a support by means of at least one org. ligand of the bleaching <b>catalyst</b> . The bleaching <b>catalyst</b> (s) form(s) a complex with at least one transition metal. The invention further relates to support-fixed bleaching <b>catalysts</b> for the <b>catalysis</b> of peroxide compds., where at least one ligand, covalently bonded to a support, is a transition-metal-free ligand, which chelates with a transition metal, derived from another source, preferably from the bleaching compn. and/or added water and thus forms the complex with a transition metal. These bleaching <b>catalysts</b> are useful in laundering of colored fabrics at low temps. A typical <b>catalyst</b> was manufd. by reaction of chloromethylated polystyrene with bis(2-pyridylmethyl)amine, and complexing the products with Fe(ClO4)3.				
IC	ICM Cl1D003-39				
CC	ICS Cl1D003-37; C08F008-42; C08F008-32; A01N033-00; A61K007-00				
ST	46-5 (Surface Active Agents and Detergents)				
IT	Section cross-reference(s): 78				
IT	polymer transition metal complex bleaching <b>catalyst</b> colored fabric laundering; chloromethylated polystyrene bispyridylmethylamine iron complex bleaching <b>catalyst</b>				
IT	Group IIIA element compounds				
IT	RL: RCT (Reactant); RACT (Reactant or reagent)				
IT	(perborates; polymer-supported transition metal complexes as <b>catalysts</b> for peroxide bleaching agents)				
IT	Oxidation <b>catalysts</b>				
IT	Polymer-supported reagents				
IT	(polymer-supported transition metal complexes as <b>catalysts</b> for peroxide bleaching agents)				
IT	Transition metal complexes				
IT	RL: CAT ( <b>Catalyst use</b> ); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)				

- (polymer-supported transition metal complexes as **catalysts** for peroxide bleaching agents)
- IT Peroxides, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymer-supported transition metal complexes as **catalysts** for peroxide bleaching agents)
- IT Fluoropolymers, uses  
 RL: **CAT (Catalyst use)**; IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (reaction products with amines, transition metal complexes; polymer-supported transition metal complexes as **catalysts** for peroxide bleaching agents)
- IT Polyamides, uses  
 Polyamines  
 Polyoxymethylenes, uses  
 Polyoxyphenylenes  
 Polysiloxanes, uses  
 Polyurethanes, uses  
 RL: **CAT (Catalyst use)**; IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (reaction products, with amines, transition metal complexes; polymer-supported transition metal complexes as **catalysts** for peroxide bleaching agents)
- IT 1121-60-4, 2-Pyridylcarboxaldehyde 1122-72-1 3099-28-3,  
 2,6-Bis(chloromethyl)pyridine 4597-87-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ligand precursor; polymer-supported transition metal complexes as **catalysts** for peroxide bleaching agents)
- IT **1539-42-0P**, Bis(2-pyridylmethyl)amine **86894-20-4P**,  
 Bis(2-pyridylmethyl)[(6-methyl-2-pyridyl)methyl]amine **279216-12-5P**  
 , Bis(2-pyridylmethyl)[[6-(chloromethyl)-2-pyridyl]methyl]amine  
 RL: **IMF (Industrial manufacture)**; **RCT (Reactant)**;  
**PREP (Preparation)**; **RACT (Reactant or reagent)**  
 (ligand; polymer-supported transition metal **complexes** as **catalysts** for peroxide bleaching agents)
- IT 79-41-4DP, Methacrylic acid, esters, polymers, reaction products with amines, transition metal complexes 993-02-2DP, Manganese triacetate, complexes with reaction products of chloromethylated polystyrene and amine ligands **1539-42-0DP**, Bis(2-pyridylmethyl)amine, reaction products with chloromethylated polystyrene, **complexes** with transition metals 4202-67-9DP, (2-Hydroxybenzyl)(2-hydroxyethyl)amine, reaction products with polymers, transition metal complexes 4730-54-5DP, 1,4,7-Triazacyclononane, reaction products with chloromethylated polystyrene, manganese complexes 6636-71-1DP, (2-Hydroxyethyl)(2-pyridylmethyl)amine, reaction products with polymers, transition metal complexes 6950-99-8DP, (3-Hydroxypropyl)(2-pyridylmethyl)amine, reaction products with polymers, transition metal complexes 6957-14-8DP, (2-Piperazinoethyl)(2-pyridylmethyl)amine, reaction products with polymers, transition metal complexes 7439-98-7DP, Molybdenum, complexes with reaction products of polymers and amine ligands 7440-18-8DP, Ruthenium, complexes with reaction products of polymers and amine ligands 7440-32-6DP, Titanium, complexes with reaction products of polymers and amine ligands 7440-48-4DP, Cobalt, complexes with reaction products of polymers and amine ligands 7440-50-8DP, Copper, complexes with reaction products of polymers and amine ligands 7440-62-2DP, Vanadium, complexes with reaction products of polymers and amine ligands 9002-81-7DP, Polyformaldehyde, reaction products with amines, transition metal complexes 9002-84-0DP, reaction products with amines, transition metal

complexes 9002-85-1DP, Polyvinylidene chloride, reaction products with amines, transition metal complexes 9002-86-2DP, Polyvinylchloride, reaction products with amines, transition metal complexes 9002-88-4DP, Polyethylene, reaction products with amines, transition metal complexes 9002-89-5DP, Polyvinyl alcohol, reaction products with amines, transition metal complexes 9002-98-6DP, Polyethylenimine, reaction products with amines, transition metal complexes 9003-07-0DP, Polypropylene, reaction products with amines, transition metal complexes 9003-17-2DP, Polybutadiene, reaction products with amines, transition metal complexes 9003-27-4DP, Polyisobutylene, reaction products with amines, transition metal complexes 9003-53-6DP, Polystyrene, chloromethylated, reaction products with amine ligands, complexes with transition metals 9004-34-6DP, Cellulose, reaction products with amines, transition metal complexes 9012-76-4DP, Chitosan, reaction products with amines, transition metal complexes 9063-70-1DP, Polychlorobutadiene, reaction products with amines, transition metal complexes 13537-24-1DP, Ferric perchlorate, complexes with reaction products of chloromethylated polystyrene and amine ligands 13770-16-6DP, Manganese perchlorate, complexes with reaction products of chloromethylated polystyrene and amine ligands 15395-61-6DP, (2-Pyridylmethyl)(2-(2-pyridyl)ethyl)amine, reaction products with polymers, transition metal complexes 22540-55-2DP, (2-Hydroxybenzyl)(2-(2-pyridyl)ethyl)amine, reaction products with polymers, transition metal complexes 25014-41-9DP, Polyacrylonitrile, reaction products with amines, transition metal complexes **25599-08-0DP**, Tris[(6-methyl-2-pyridyl)methyl]amine, reaction products with polymers, transition metal **complexes** **25599-10-4DP**, Bis[(6-Methyl-2-pyridyl)methyl](2-pyridylmethyl)amine, reaction products with polymers, transition metal **complexes** 27528-50-3DP, (2-Hydroxybenzyl)(2-morpholinoethyl)amine, reaction products with polymers, transition metal complexes 39342-70-6DP, Poly[oxy(dimethylphenylene)], reaction products with amines, transition metal complexes 39342-71-7DP, Poly(dimethylphenylene oxide), reaction products with amines, transition metal complexes 56098-51-2DP, [3-(N,N-Dimethylamino)propyl](2-pyridylmethyl)amine, reaction products with polymers, transition metal complexes 63671-68-1DP, (2-Hydroxybenzyl)(2-pyridylmethyl)amine, reaction products with polymers, transition metal complexes 83144-89-2DP, N,N,N',N'-Tetrakis(2-benzimidazolylmethyl)-1,3-diamino-2-propanol, reaction products with polymers, transition metal complexes **127666-77-7DP**, [(6-Methyl-2-pyridyl)methyl][2-(2-pyridyl)ethyl][(2-pyridyl)methyl]amine, reaction products with polymers, transition metal **complexes** 133280-80-5DP, (2-Pyridylmethyl)[2-(N,N-dimethylamino)ethyl]amine, reaction products with polymers, transition metal complexes 151103-52-5DP, N,N,N',N'-Tetrakis[(1-methyl)-2-imidazolylmethyl]-1,3-diamino-2-propanol, reaction products with polymers, transition metal complexes 158900-81-3DP, [2-(N,N-Dimethylamino)ethyl](2-hydroxybenzyl)amine, reaction products with polymers, transition metal complexes 163165-83-1DP, (2-Pyridylmethyl)(2-pyrrolidinoethyl)amine, reaction products with polymers, transition metal complexes 211489-46-2DP, (2-Hydroxybenzyl)(3-hydroxypropyl)amine, reaction products with polymers, transition metal complexes 225795-36-8DP, reaction products with polymers, transition metal complexes **260395-26-4DP**, N-Methyl-N,N',N'-tris(3-methyl-2-pyridylmethyl)ethylenediamine, reaction products with polymers, transition metal **complexes** **260395-27-5DP**, N,N',N'-Tris(3-methyl-2-pyridylmethyl)-N-ethylethylenediamine, reaction products with polymers, transition metal **complexes** **279216-12-5DP**, reaction products with chloromethylated polystyrene, **complexes** with transition metals

286832-15-3DP, N,N,N',N'-Tetrakis[1-(2-hydroxyethyl)-1H-benzimidazol-2-ylmethyl]-1,3-diamino-2-propanol, reaction products with polymers, transition metal complexes 339987-91-6DP, N,N,N',N'-Tetrakis[2-(5,6-dimethyl)benzimidazolylmethyl]-1,3-diamino-2-propanol, reaction products with polymers, transition metal complexes 553668-12-5DP, (2-Morpholinoethyl)(2-pyridylmethyl)amine, reaction products with polymers, transition metal complexes 553668-13-6DP, (2-Piperidinoethyl)(2-pyridylmethyl)amine, reaction products with polymers, transition metal complexes 553668-14-7DP, (2-Hydroxybenzyl)(2-piperidinoethyl)amine, reaction products with polymers, transition metal complexes 553668-15-8DP, (2-Hydroxybenzyl)(2-pyrrolidinoethyl)amine, reaction products with polymers, transition metal complexes 553668-16-9DP, (2-Hydroxybenzyl)(2-piperazinoethyl)amine, reaction products with polymers, transition metal complexes 553668-17-0DP, [(Benzimidazol-2-yl)methyl][(6-methyl-2-pyridyl)methyl][(2-pyridyl)methyl]amine, reaction products with polymers, transition metal complexes 553668-18-1DP, Bis[(Benzimidazol-2-yl)methyl][(6-methyl-2-pyridyl)methyl]amine, reaction products with polymers, transition metal complexes 553668-19-2DP, reaction products with polymers, transition metal complexes 553668-20-5DP, Bis[(5,6-dimethylbenzimidazol-2-yl)methyl][(6-Methyl-2-pyridyl)methyl]amine, reaction products with polymers, transition metal complexes 553668-21-6DP, reaction products with polymers, transition metal complexes 553668-22-7DP, Bis(2-quinolyl)[(6-methyl-2-pyridyl)methyl]amine, reaction products with polymers, transition metal complexes 553668-23-8DP, (2-Morpholinoethyl)[(6-methyl-2-pyridyl)methyl][(2-pyridyl)methyl]amine, reaction products with polymers, transition metal complexes 553668-24-9DP, [(6-Methyl-2-pyridyl)methyl](2-piperidinoethyl)[(2-pyridyl)methyl]amine, reaction products with polymers, transition metal complexes 553668-25-0DP, Bis[2-(2-pyridyl)ethyl][(6-Methyl-2-pyridyl)methyl]amine, reaction products with polymers, transition metal complexes

RL: CAT (Catalyst use); IMF (Industrial manufacture);

PREP (Preparation); USES (Uses)

(polymer-supported transition metal complexes as catalysts for peroxide bleaching agents)

IT 553668-11-4DP, Bis(2-pyridylmethyl)[(6-(hydroxymethyl)-2-pyridyl)methyl]amine sodium salt, reaction products with chloromethylated polystyrene

RL: IMF (Industrial manufacture); PREP (Preparation)

(polymer-supported transition metal complexes as catalysts for peroxide bleaching agents)

IT 75-13-8DP, Isocyanic acid, esters, polymers

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(reaction products, with amines, transition metal complexes; polymer-supported transition metal complexes as catalysts for peroxide bleaching agents)

IT 1539-42-0P, Bis(2-pyridylmethyl)amine

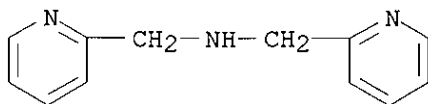
RL: IMF (Industrial manufacture); PREP (Preparation);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; polymer-supported transition metal complexes as catalysts for peroxide bleaching agents)

RN 1539-42-0 HCAPLUS

CN 2-Pyridinemethanamine, N-(2-pyridinylmethyl)- (9CI) (CA INDEX NAME)

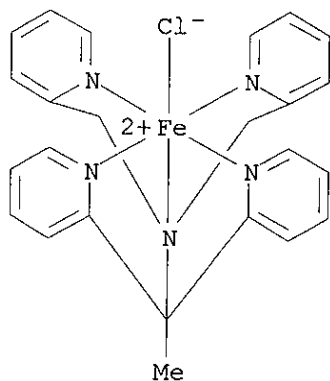


RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2003:203385 HCAPLUS  
DN 138:223311  
TI Enzymatic detergent compositions containing transition metal complex as bleaching **catalyst**  
IN Hage, Ronald; Klugkist, Jan; Swarthoff, Ton; Van Der Waal, Patrick; Ehrnsperger, Eric Charles; Bae-Lee, Myongsuk  
PA Unilever Home & Personal Care USA, Division of Conopco, Inc., USA  
SO U.S. Pat. Appl. Publ., 18 pp., Cont.-in-part of U.S. Ser. No. 13,755.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003050211	A1	20030313	US 2002-151628	20020520
	US 2002137654	A1	20020926	US 2001-13755	20011211
PRAI	EP 2000-204514	A	20001214		
	US 2001-13755	A2	20011211		
OS	MARPAT 138:223311				
AB	An enzymic detergent compn. comprises: (a) surfactant; (b) 10-20,000 LU per g of the detergent compn. of a lipolytic enzyme obtainable from Humicola lanuginosa, Pseudomonas pseudoalcaligenes, Rhizomucor miehei and (c) a non-cross-bridged polydentate N-donor ligand capable of forming a complex with a transition metal, wherein said complex is capable of <b>catalyzing</b> the bleaching of stains on fabrics by means of atm. oxygen.				
IC	ICM C11D003-00				
NCL	510305000; 510311000; 510392000; 510376000				
CC	46-5 (Surface Active Agents and Detergents)				
ST	lipolytic enzyme bleach stain; transition metal complex polydentate nitrogen donor ligand <b>catalyst</b>				
IT	Detergents (enzyme-contg.; enzymic detergent compns. contg. transition metal complex as bleaching <b>catalyst</b> )				
IT	Oxidation <b>catalysts</b> (enzymic detergent compns. contg. transition metal complex)				
IT	Pseudomonas pseudoalcaligenes Rhizomucor miehei Thermomyces lanuginosus (enzymic detergent compns. contg. transition metal complex as bleaching <b>catalyst</b> )				
IT	Detergents (laundry, enzyme-contg.; enzymic detergent compns. contg. transition metal complex as bleaching <b>catalyst</b> )				
IT	Enzymes, biological studies RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)				

- (lytic, lipolytic; enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- IT 9001-62-1, Lipolase 100T 51377-41-4, Cutinase  
 RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)  
 (enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- IT 114673-77-7 167695-89-8 250670-73-6 260395-33-3 260395-37-7  
 260431-32-1 302543-53-9  
 RL: CAT (Catalyst use); PRP (Properties); USES (Uses)  
 (enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- IT 328564-06-3P 329279-17-6P  
 RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- IT 253669-69-1P, 1-Ethyl-1,4,7-triazacyclononane 329279-22-3P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- IT 74-96-4, Ethylbromide 91-22-5, Quinoline, reactions 122-51-0, Orthoformicacidtriethylester 128-08-5, N-Bromosuccinimide 4730-54-5, 1,4,7-Triazacyclononane 13478-10-9, Iron(II) chloride tetrahydrate 223504-10-7, N,N-Bis(pyridin-2-ylmethyl)-1,1-bis(pyridin-2-yl)-1-aminoethane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- IT 5632-15-5P 67705-38-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- IT 328564-06-3P  
 RL: RCT (Reactant); RACT (Reactant or reagent); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (enzymic detergent compns. contg. transition metal complex as bleaching **catalyst**)
- RN 328564-06-3 HCAPLUS  
 CN Iron(1+), chloro[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-bis[(2-pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]-, chloride, (OC-6-43)- (9CI) (CA INDEX NAME)

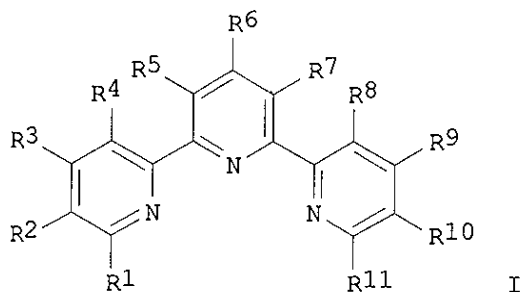


● Cl<sup>-</sup>

L26 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:849769 HCAPLUS  
 DN 137:354716  
 TI Use of metal complex compounds as oxidation **catalysts**, ligands,  
 and use in bleach agents  
 IN Schlingloff, Gunther; Wieprecht, Torsten; Bachmann, Frank; Dannacher,  
 Joseph; Dubs, Marie-Josée; Hazenkamp, Menno; Richter, Grit; Schmidt,  
 Brigitte; Schneider, Albert; Weingartner, Peter  
 PA Ciba Specialty Chemicals Holding Inc., Switz.  
 SO PCT Int. Appl., 64 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002088289	A2	20021107	WO 2002-EP4572	20020425
	WO 2002088289	A3	20030227		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRAI	EP 2001-810425	A	20010430		
	CH 2001-2278	A	20011213		
OS	MARPAT 137:354716				
GI					





AB Metal complex compds.  $[LnMmXp]zYq$  [ $M = Mn, Ti, Fe, Co, Ni$  or  $Cu$ ,  $X =$  coordinating or bridging radical,  $n$  and  $m = 1-8$ ,  $p = 0-32$ ,  $z =$  charge of the metal complex,  $y$  is a counterion,  $q = z/(\text{charge } Y)$ , and  $L$  is a ligand I where  $R1-11 = H$ ; unsubstituted or substituted  $C1-C18$  alkyl or aryl; cyano; halogen; nitro;  $-COOR12$  or  $-SO3R12$  where  $R12$  is in each case  $H$ , a cation or unsubstituted or substituted  $C1-C18$ alkyl or aryl;  $-SR13$ ,  $-SO2R13$  or  $-OR13$  where  $R13$  is in each case  $H$  or unsubstituted or substituted  $C1-C18$ alkyl or aryl;  $-N(R13)-NR'13R13$ ;  $-NR14R15$  or  $-NR14R15R16$  where  $R14$ ,  $R15$  and  $R16 = H$  or unsubstituted or substituted  $C1-C18$ -alkyl or aryl, or  $R14$  and  $R15$  together with the  $N$  atom bonding them form an unsubstituted or substituted 5-, 6- or 7-membered ring which may optionally contain further hetero atoms; providing  $R1-11$  are not simultaneously  $H$ ], are used as **catalysts** for peroxide bleaching agents.

IC ICM C11D003-39

ICS B01J031-18; D21C009-10; D21C009-16; C07D213-70; C07D213-61; C07D213-77; C07D213-74; C07D213-30; C07D301-12; C07F013-00

CC 46-5 (Surface Active Agents and Detergents)

Section cross-reference(s): 43, 45, 67

ST metal terpyridine complex peroxide bleach **catalyst**

IT Bleaching agents

Disinfectants

(contg. metal terpyridine complexes as oxidn. **catalysts** for stain removal in fabrics or hard surfaces)

IT Epoxidation **catalysts**

(metal terpyridine complexes as oxidn. **catalysts**)

IT Cellulose pulp

(metal terpyridine complexes as oxidn. **catalysts** for bleaching)

IT Bleaching

Oxidation **catalysts**

(metal terpyridine complexes as oxidn. **catalysts** for stain removal in fabrics or hard surfaces)

IT Detergents

(peroxide-contg.; contg. metal terpyridine complexes as oxidn. **catalysts** for stain removal in fabrics or hard surfaces)

IT Ligands

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(terpyridine; in manuf. of metal complexes as oxidn. **catalysts**)

IT 140-88-5, Ethyl acrylate

RL: RCT (Reactant); RACT (Reactant or reagent)

(epoxidn.; metal terpyridine complexes as oxidn. **catalysts** for)

IT 24484-93-3P 71777-70-3P 474490-79-4P 474490-81-8P 474490-83-0P

474490-85-2P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate for ligand; metal terpyridine complexes as oxidn. catalysts for bleaching)

- IT 89972-77-0P, 4'-p-Tolyl-[2,2':6',2'']terpyridine  
 97238-12-5P, 4,4',4''-Trichloro[2,2':6',2'']terpyridine  
 105374-69-4P 128143-88-4P, [2,2':6',2'']-Terpyridin]-  
 4'(1'H)-one 128143-89-5P, 4'-Chloro-[2,2':6',2'']terpyridine  
 145533-40-0P, 4'-Ethoxy-[2,2':6',2'']terpyridine  
 157557-32-9P, 4'-(4-tert-Butylphenyl)-[2,2':6',2'']terpyridine  
 158014-68-7P 162151-66-8P 162151-67-9P  
 183112-84-7P 193944-61-5P 193945-29-8P  
 279674-33-8P 474490-62-5P 474490-65-8P  
 474490-68-1P 474490-70-5P 474490-72-7P  
 474490-74-9P 474490-87-4P 474490-89-6P  
 474490-92-1P 474490-94-3P 474490-96-5P  
 474490-98-7P 474491-01-5P 474491-03-7P  
 474491-05-9P 474491-07-1P 474491-09-3P

RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; metal terpyridine complexes as oxidn. catalysts for bleaching)

IT 4660-80-4P

RL: IMF (Industrial manufacture); PREP (Preparation)

(metal terpyridine complexes as oxidn. catalysts for)

- IT 14854-49-0 474491-31-1 474491-33-3 474491-35-5 474491-37-7  
 474491-39-9 474491-41-3 474491-43-5 474494-43-4

RL: CAT (Catalyst use); USES (Uses)

(metal terpyridine complexes as oxidn. catalysts for bleaching)

IT 474491-19-5P 474491-21-9P 474491-23-1P

474491-25-3P 474491-27-5P

RL: CAT (Catalyst use); IMF (Industrial manufacture);

PREP (Preparation); USES (Uses)

(metal terpyridine complexes as oxidn. catalysts for bleaching)

IT 128143-87-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(metal terpyridine complexes as oxidn. catalysts for bleaching)

- IT 74-88-4, Methyl iodide, reactions 98-98-6, Pyridine-2-carboxylic acid  
 109-83-1, N-Methylaminoethanol 111-42-2, Diethanolamine, reactions  
 123-75-1, Pyrrolidine, reactions 141-52-6, Sodium ethanolate 302-01-2,  
 Hydrazine, reactions 939-97-9, 4-tert-Butylbenzaldehyde 1122-62-9,  
 2-Acetylpyridine 2524-52-9, Pyridine-2-carboxylic acid ethyl ester  
 5720-06-9, 2-Methoxyphenylboronic acid 7719-09-7, Thionyl chloride  
 10026-13-8, Phosphorus pentachloride 13446-34-9, Manganese chloride  
 tetrahydrate 100366-66-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(metal terpyridine complexes as oxidn. catalysts for bleaching)

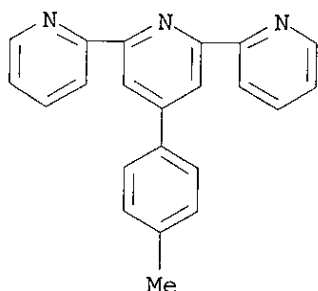
IT 89972-77-0P, 4'-p-Tolyl-[2,2':6',2'']terpyridine

RL: RCT (Reactant); RACT (Reactant or reagent);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; metal terpyridine complexes as oxidn. catalysts for bleaching)

RN 89972-77-0 HCAPLUS  
CN 2,2':6',2''-Terpyridine, 4'-(4-methylphenyl)- (9CI) (CA INDEX NAME)



L26 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:793733 HCAPLUS  
DN 137:312744  
TI Composition and method for air bleaching a substrate via a transitional metal complex **catalyst**  
IN Chapple, Andrew Paul; Hermant, Roelant Mathijs; Hodgkinson, Kerry Elizabeth  
PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited  
SO PCT Int. Appl., 38 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002081613	A1	20021017	WO 2002-EP3083	20020315
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003036492	A1	20030220	US 2002-117681	20020405
PRAI	GB 2001-8737	A	20010406		

AB A bleaching compn. contains a ligand having at least one heteroarom. substituent that forms a complex with a transition metal or a transition metal complex thereof, and an anionic surfactant having a crit. micelle concn. value of  $3 \times 10^{-4}$  M or less. The bleaching compn. forms in an aq. soln. an air bleaching medium that has less than 1% of a peroxy species present.

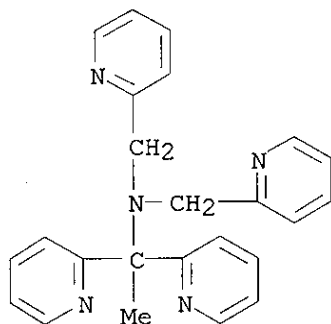
IC ICM C11D003-39  
CC 46-5 (Surface Active Agents and Detergents)  
ST air bleaching transitional metal **catalyst** detergent compn  
IT Oxidation **catalysts**  
(compn. and method for air bleaching a substrate)  
IT 328564-06-3P  
RL: **CAT (Catalyst use)**; IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)  
(compn. and method for air bleaching a substrate)

IT 223504-10-7, N,N-Bis(pyridin-2-ylmethyl)-1,1-bis(pyridin-2-yl)-1-aminoethane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ligand; compn. and method for air bleaching a substrate)

IT 223504-10-7, N,N-Bis(pyridin-2-ylmethyl)-1,1-bis(pyridin-2-yl)-1-aminoethane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ligand; compn. and method for air bleaching a substrate)

RN 223504-10-7 HCAPLUS

CN 2-Pyridinemethanamine, .alpha.-methyl-.alpha.-2-pyridinyl-N,N-bis(2-pyridinylmethyl)- (9CI) (CA INDEX NAME)



RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2002:676135 HCAPLUS  
 DN 137:203056  
 TI Unit dose cleaning product  
 IN Gupta, Neeraj; Hage, Ronald; Veerman, Simon Marinus  
 PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited  
 SO PCT Int. Appl., 71 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002068577	A1	20020906	WO 2002-EP1789	20020220
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2002187909	A1	20021212	US 2002-84809	20020226
PRAI GB 2001-4979	A	20010228		
OS MARPAT 137:203056				
AB A unit dose cleaning product comprises a capsule formed of a material				

capable of dissolving, disintegrating or dispersing in a wash liquor, and filled with a substantially nonaq. liq. cleaning compn. including an org. substance which forms a complex with a transition metal, the complex being capable of **catalyzing** bleaching of a substrate by atm. O.

IC ICM C11D017-04  
ICS C11D017-00; C11D003-39

CC 46-6 (Surface Active Agents and Detergents)  
Section cross-reference(s): 67

ST encapsulated bleach unit dose laundry dishwashing detergent; iron complex bleach **catalyst** detergent

IT Bleaching agents  
(**catalysts**; tableted or envelope nonaq. cleaning product contg. encapsulated bleach **catalyst** for fabric or dishware)

IT Detergents  
(dishwashing; tableted or envelope nonaq. cleaning product contg. encapsulated bleach **catalyst** for)

IT Detergents  
(laundry; tableted or envelope nonaq. cleaning product contg. encapsulated bleach **catalyst** for)

IT **Catalysts**  
(tableted or envelope nonaq. cleaning product contg. encapsulated bleach **catalyst** for fabric or dishware)

IT 9002-89-5, Poly(vinyl alcohol)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(film envelope; tableted or envelope nonaq. cleaning product contg. encapsulated bleach **catalyst** for fabric or dishware)

IT 223504-10-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**ligand**; tableted or envelope nonaq. cleaning product contg. encapsulated **bleach catalyst** for fabric or dishware)

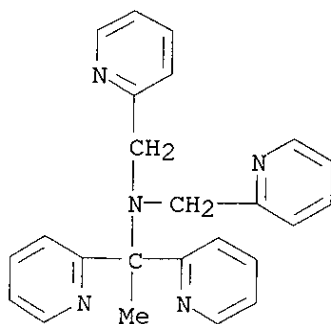
IT 328564-06-3P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(tableted or envelope nonaq. cleaning product contg. encapsulated bleach **catalyst** for fabric or dishware)

IT 7758-94-3, Iron chloride (FeCl<sub>2</sub>)  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(tableted or envelope nonaq. cleaning product contg. encapsulated bleach **catalyst** for fabric or dishware)

IT 223504-10-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**ligand**; tableted or envelope nonaq. cleaning product contg. encapsulated **bleach catalyst** for fabric or dishware)

RN 223504-10-7 HCAPLUS

CN 2-Pyridinemethanamine, .alpha.-methyl-.alpha.-2-pyridinyl-N,N-bis(2-pyridinylmethyl)- (9CI) (CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2002:291689 HCAPLUS  
DN 136:311577  
TI Transition metal complexes with polydentate ligands for reinforcing the  
bleaching and delignifying effects of peroxy compounds  
IN Jakob, Harald; Kunz, Ulrike  
PA Degussa A.-G., Germany  
SO Ger. Offen., 12 pp.  
CODEN: GWXXBX  
DT Patent  
LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10051317	A1	20020418	DE 2000-10051317	20001017
	EP 1199402	A2	20020424	EP 2001-120456	20010828
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	NO 2001005027	A	20020418	NO 2001-5027	20011016
	ZA 2001008492	A	20020606	ZA 2001-8492	20011016
	BR 2001004611	A	20020604	BR 2001-4611	20011017
	US 2002066542	A1	20020606	US 2001-978101	20011017
PRAI	DE 2000-10051317	A	20001017		
OS	MARPAT 136:311577				
AB	The title compds., which increase selectivity in the purifn. of lignin-contg. fibers, have the general formula [LMXp]zYq (L = polydentate polyamine of specified structure, M = transition metal, X = anionic or neutral coordinating species, Y = counter-ion or -mol., p = 0-4, q = z/charge on Y, z = charge of complex). Mixing a MeOH soln. of 3.89 mmol N,N-bis(2-pyridylmethyl)bis-2-pyridylmethylamine (I) with an aq. soln. of 3.89 mmol CoCl <sub>2</sub> ·6H <sub>2</sub> O and 7.78 mmol NaClO <sub>4</sub> at room temp. and passing air through the mixt. gently for 2 h gave 92% [(CoI)2O2]Cl <sub>2</sub> (ClO <sub>4</sub> ) <sub>2</sub> (II). Treating 30 g bone-dry cellulose with an aq. soln. of 70 ppm II, 4.0% H <sub>2</sub> O <sub>2</sub> , and 2.0% NaOH gave pulp with kappa no. 13.6, and delignification 42.1%; vs. 14.7 and 37.4, resp., in the absence of II.				
IC	ICM D21C009-10 ICS D21C009-16				
CC	43-6 (Cellulose, Lignin, Paper, and Other Wood Products) Section cross-reference(s): 67				
ST	<b>catalyst</b> bleaching delignification cellulose pulp; transition metal complex polydentate <b>catalyst</b> ; cobalt complex polydentate				

**catalyst**; pyridylmethylanine deriv tetradentate complex  
**catalyst**; polyamine tetradentate complex **catalyst**

IT Pulp bleaching  
 (**catalysts**; transition metal complexes with polydentate ligands for reinforcing the bleaching and delignifying effects of peroxy compds.)

IT Amines, uses  
 RL: **CAT (Catalyst use)**; USES (Uses)  
 (polyamines, nonpolymeric, polydentate, transition metal complexes; transition metal complexes with polydentate ligands for reinforcing the bleaching and delignifying effects of peroxy compds.)

IT Transition metals, uses  
 RL: **CAT (Catalyst use)**; USES (Uses)  
 (polydentate polyamine complexes; transition metal complexes with polydentate ligands for reinforcing the bleaching and delignifying effects of peroxy compds.)

IT Cellulose pulp  
 Oxidation **catalysts**  
 (transition metal complexes with polydentate ligands for reinforcing the bleaching and delignifying effects of peroxy compds.)

IT 223504-12-9 412048-42-1 412048-43-2  
 RL: **CAT (Catalyst use)**; USES (Uses)  
 (transition metal complexes with polydentate ligands for reinforcing the bleaching and delignifying effects of peroxy compds.)

IT 412048-41-0P  
 RL: **CAT (Catalyst use)**; IMF (Industrial manufacture);  
**PREP (Preparation)**; USES (Uses)  
 (transition metal **complexes** with polydentate **ligands** for reinforcing the **bleaching** and delignifying effects of peroxy compds.)

IT 412048-41-0P  
 RL: **CAT (Catalyst use)**; IMF (Industrial manufacture);  
**PREP (Preparation)**; USES (Uses)  
 (transition metal **complexes** with polydentate **ligands** for reinforcing the **bleaching** and delignifying effects of peroxy compds.)

RN 412048-41-0 HCAPLUS

CN Cobalt(4+), [.mu.-(peroxy-.kappa.O:.kappa.O')}]bis[.alpha.-(2-pyridinyl-.kappa.N)-N,N-bis[(2-pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]di-, dichloride diperchlorate (9CI) (CA INDEX NAME)

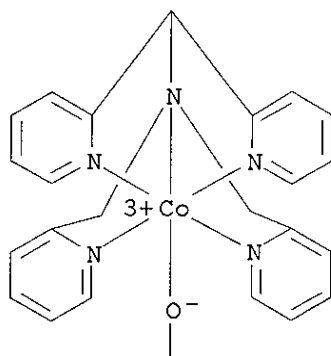
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CRN 412048-40-9

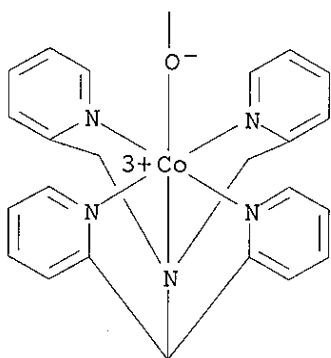
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CCI CCS

PAGE 1-A



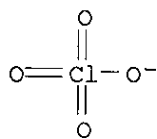
PAGE 2-A



CM 2

CRN 14797-73-0  
CMF Cl 04





L26 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:661546 HCAPLUS

DN 135:212629

TI Laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**

IN Van Deurzen, Maria Petra Johanna; Hage, Ronald; Veerman, Simon Marinus

PA Unilever Plc, UK; Unilever NV; Hindustan Lever Ltd.

SO PCT Int. Appl., 91 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001064828	A1	20010907	WO 2001-EP408	20010115
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002010121	A1	20020124	US 2001-795810	20010228
PRAI	GB 2000-5089	A	20000301		
OS	MARPAT 135:212629				
AB	A bleaching compn. for laundry fabrics is provided, comprising: hydrogen peroxide or a source of hydrogen peroxide; a bleach <b>catalyst</b> comprising a ligand which forms a complex with a transition metal, the complex <b>catalyzing</b> bleaching of stains in the presence of peroxygen bleach or a peroxy-based or -generating bleach system; and a dye transfer inhibiting agent. The bleaching compn. provides effective bleaching performance on fabric stains without unacceptable transfer of dyes between fabrics.				
IC	ICM C11D003-39 ICS C11D003-37				
CC	46-5 (Surface Active Agents and Detergents) Section cross-reference(s): 40				
ST	bleaching laundry dye transfer inhibiting stain removing compn; transition metal complex bleaching <b>catalyst</b>				
IT	Bleaching agents Oxidation <b>catalysts</b> (laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching <b>catalyst</b> )				
IT	Transition metal complexes RL: <b>CAT (Catalyst use)</b> ; SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (laundry bleaching comprising a dye transfer inhibiting agent and a				

transition metal complex bleaching **catalyst**)

IT Detergents  
(stain removers; laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**)

IT 260395-33-3P 302541-71-5P 302541-84-0P  
328564-06-3P 357967-50-1P 358334-39-1P  
RL: CAT (Catalyst use); SPN (Synthetic preparation);  
TEM (Technical or engineered material use); PREP (Preparation);  
USES (Uses)  
(bleaching **catalyst**; laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**)

IT 9002-98-6D, derivs. 9003-39-8, Polyvinylpyrrolidone 9045-81-2, Polyvinylpyridine N-oxide 25232-42-2, Polyvinylimidazole 29297-55-0, N-Vinylimidazole N-vinylpyrrolidone copolymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(dye transfer inhibiting agent; in laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**)

IT 223504-10-7  
RL: RCT (Reactant); TEM (Technical or engineered material use);  
RACT (Reactant or reagent); USES (Uses)  
(in laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**)

IT 3313-92-6, Sodium percarbonate 7632-04-4, Sodium perborate 7722-84-1, Hydrogen peroxide, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(in laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**)

IT 61920-87-4P  
RL: CAT (Catalyst use); SPN (Synthetic preparation);  
TEM (Technical or engineered material use); PREP (Preparation);  
USES (Uses)  
(laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**)

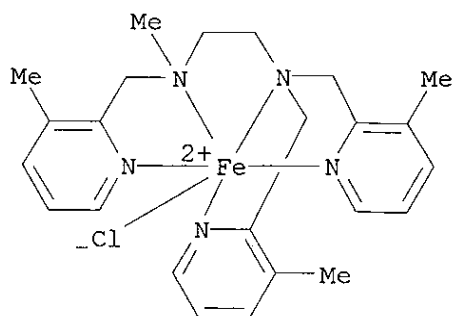
IT 260395-33-3P  
RL: CAT (Catalyst use); SPN (Synthetic preparation);  
RACT (Reactant or reagent); PREP (Preparation); USES (Uses)  
(bleaching **catalyst**; laundry bleaching comprising a dye transfer inhibiting agent and a transition metal complex bleaching **catalyst**)

RN 260395-33-3 HCAPLUS

CN Iron(1+), chloro[N-methyl-N,N',N'-tris[(3-methyl-2-pyridinyl-.kappa.N)methyl]-1,2-ethanediamine-.kappa.N,.kappa.N']-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 260395-32-2  
CMF C24 H31 Cl Fe N5  
CCI CCS

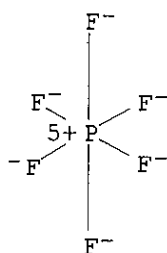


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:661545 HCAPLUS  
DN 135:197250  
TI Oxygen-peroxyl competing bleaching laundry composition with transition metal complex **catalyst**  
IN Hage, Ronald; Swarthoff, Ton; Tetard, David; Thornthwaite, David William  
PA Unilever PLC, UK; Unilever Nv; Hindustan Lever Ltd.  
SO PCT Int. Appl., 86 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001064827	A1	20010907	WO 2001-EP1694	20010215
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,				

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 BR 2001008890 A 20021105 BR 2001-8890 20010215  
 EP 1283861 A1 20030219 EP 2001-923577 20010215  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 US 2002013247 A1 20020131 US 2001-796210 20010228  
 PRAI GB 2000-4988 A 20000301  
 WO 2001-EP1694 W 20010215

AB An oxygen-peroxyl competing bleaching laundry compn. for use in aq. wash medium for **catalytically** bleaching a substrate, comprises (i) an org. substance which forms a complex with a transition metal, which is capable of **catalyzing** bleaching of the substrate by atm. oxygen and a peroxyl species, (ii) a peroxyl bleaching agent selected from the group consisting of a peroxyl species and a peroxyl species precursor, wherein the application of a unit dose of the oxygen-peroxyl competing bleaching compn. provides a concn. of peroxyl species permitting dual bleaching during a wash.

IC ICM C11D003-39  
 ICS C11D017-00

CC 46-5 (Surface Active Agents and Detergents)

ST atm oxygen peroxyl transition metal complex **catalyst** bleach;  
 dual bleaching laundry compn

IT Detergents  
 (laundry; oxygen-peroxyl competing bleaching laundry compn. with transition metal complex **catalyst**)

IT Bleaching agents  
 Oxidation **catalysts**  
 (oxygen-peroxyl competing bleaching laundry compn. with transition metal complex **catalyst**)

IT **328564-06-3P**  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES  
 (Uses)  
 (oxygen-peroxyl competing bleaching laundry compn. with transition metal complex **catalyst**)

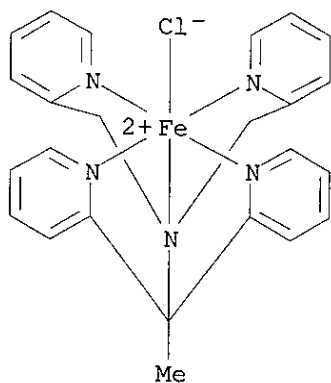
IT 13478-10-9 223504-10-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (oxygen-peroxyl competing bleaching laundry compn. with transition metal complex **catalyst**)

IT 7722-84-1, Hydrogen peroxide, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (oxygen-peroxyl competing bleaching laundry compn. with transition metal complex **catalyst**)

IT **328564-06-3P**  
 RL: RCT (Reactant); RACT (Reactant or reagent); TEM  
 (Technical or engineered material use); PREP (Preparation); USES  
 (Uses)  
 (oxygen-peroxyl competing bleaching laundry compn. with transition metal complex **catalyst**)

RN 328564-06-3 HCAPLUS

CN Iron(1+), chloro[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-bis[(2-pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]-, chloride, (OC-6-43)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:661544 HCAPLUS

DN 135:244102

TI Bleaching laundry composition with transition metal complex  
**catalyst** and peroxy source

IN Hage, Ronald; Nuhlen, Daniela; Weyhermuller, Thomas; Wieghardt, Karl

PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Ltd.

SO PCT Int. Appl., 54 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001064826	A2	20010907	WO 2001-EP1689	20010215
	WO 2001064826	A3	20020321		
	W:		AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	BR 2001008772	A	20021126	BR 2001-8772	20010215
	EP 1259588	A2	20021127	EP 2001-929344	20010215
	R:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR		
	US 2002010120	A1	20020124	US 2001-795805	20010228
	US 6610641	B2	20030826		
PRAI	GB 2000-4849	A	20000229		
	GB 2000-4852	A	20000229		
	GB 2000-4854	A	20000229		

WO 2001-EP1689 W 20010215

OS MARPAT 135:244102

AB The invention relates to **catalytically** bleaching substrates, esp. laundry fabrics, with a bleaching compn. comprising a ligand that forms a complex with a transition metal and .gtoreq.1%, preferably .gtoreq.5% of a peroxy species or equiv. source.

IC ICM C11D003-39  
ICS D06L003-02

CC 46-5 (Surface Active Agents and Detergents)

IT Bleaching agents  
Oxidation **catalysts**  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT Detergents  
(laundry; bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT 329279-19-8  
RL: **CAT (Catalyst use)**; USES (Uses)  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT 328564-06-3P 360044-83-3P  
RL: **CAT (Catalyst use)**; PRP (Properties); **SPN (Synthetic preparation)**; **PREP (Preparation)**; USES (Uses)  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT 329279-17-6P  
RL: **CAT (Catalyst use)**; PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT 67705-38-8P, 1,4,7-Triazatricyclo(5.2.1.0<sup>4</sup>,10)decane 253669-69-1P, 1-Ethyl-1,4,7-triazacyclononane 329279-23-4P 329279-24-5P  
RL: PRP (Properties); RCT (Reactant); **SPN (Synthetic preparation)**; **PREP (Preparation)**; RACT (Reactant or reagent)  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

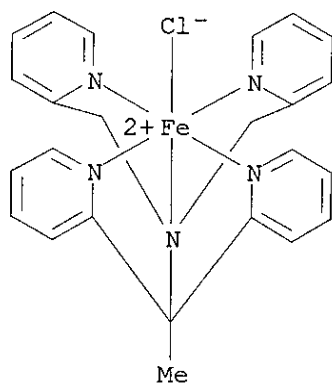
IT 329279-22-3P  
RL: PRP (Properties); **SPN (Synthetic preparation)**; **PREP (Preparation)**  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT 220811-58-5P 357397-75-2P 357397-76-3P 357397-77-4P 357397-78-5P  
RL: PRP (Properties); **SPN (Synthetic preparation)**; TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT 74-96-4, Ethylbromide 91-22-5, Quinoline, reactions 122-51-0, Orthoformicacidtriethylester 128-08-5, N-Bromosuccinimide 1120-82-7, 1-Pyrazolylmethanol 4730-54-5, 1,4,7-Triazacyclononane 4857-04-9, 2-Chloromethylbenzimidazole 6959-47-3, 2-Picolyl chloride hydrochloride 7789-46-0, Iron dibromide 13478-10-9 13520-69-9, Iron(II) perchlorate hexahydrate 223504-10-7  
RL: **RCT (Reactant)**; **RACT (Reactant or reagent)**  
(bleaching laundry compn. with transition metal complex **catalyst** and peroxy source)

IT 5632-15-5P  
RL: **RCT (Reactant)**; **SPN (Synthetic preparation)**; **PREP (Preparation)**; **RACT (Reactant or reagent)**

(bleaching laundry compn. with transition metal complex  
**catalyst** and peroxy source)  
 IT 133476-84-3, 1,4,7-Tris(pyrazol-1-ylmethyl)-1,4,7-triazacyclononane  
 329279-25-6 329279-26-7 329279-28-9 329279-29-0 329279-30-3  
 357397-79-6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (bleaching laundry compn. with transition metal complex  
**catalyst** and peroxy source)  
 IT **328564-06-3P**  
 RL: RCT (Reactant); RACT (Reactant or reagent);  
 SPN (Synthetic preparation); PREP (Preparation); USES  
 (Uses)  
 (bleaching laundry compn. with transition metal  
**complex catalyst** and peroxy source)  
 RN 328564-06-3 HCAPLUS  
 CN Iron(1+), chloro[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-bis[(2-  
 pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]-,  
 chloride, (OC-6-43)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

L26 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2001:168097 HCAPLUS  
 DN 134:209696  
 TI Preparation of a complex of organic compound/transition metal for use as  
**catalyst** in bleaching composition  
 IN Hage, Ronald; Veerman, Simon Marinus  
 PA Unilever PLC, UK; Unilever N.V.; Hindustan Lever Limited  
 SO PCT Int. Appl., 100 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001016271	A1	20010308	WO 2000-EP8076	20000816
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,				

HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,  
 ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2000012667 A1 20000309 WO 1999-GB2876 19990901

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ,  
 DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
 JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,  
 MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,  
 TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD,  
 RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
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 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2000012808 A1 20000309 WO 1999-GB2878 19990901

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ,  
 DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
 JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,  
 MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,  
 TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD,  
 RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
 ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

BR 2000013746 A 20020507 BR 2000-13746 20000816

EP 1208188 A1 20020529 EP 2000-962335 20000816

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL

PRAI WO 1999-GB2876 W 19990901

WO 1999-GB2878 W 19990901

GB 2000-4990 A 20000301

GB 1998-19046 A 19980901

GB 1999-6474 A 19990319

GB 1999-7713 A 19990401

GB 1999-7714 A 19990401

WO 2000-EP8076 W 20000816

OS MARPAT 134:209696

AB The invention relates to a liq. bleaching compn. for **catalytically**  
 bleaching substrates, esp. laundry fabrics, with atm. oxygen or air. A  
 liq. bleaching compn. is provided comprising an org. substance which forms  
 a complex with a transition metal, the complex **catalyzing**  
 bleaching of a substrate by atm. oxygen, and a liq. carrier or solvent,  
 wherein the compn. is substantially devoid of peroxygen bleach or a  
 peroxy-based or -generating bleach system. The org. compd. is  
 N,N-bis(pyridin-2-ylmethyl)-1,1-bis(pyridin-2-yl)-1-aminoethane. Also  
 provided is a method of bleaching a substrate comprising applying the liq.  
 bleaching compn. to the substrate. Also provided is a method of treating  
 a textile by contacting the textile with the liq. bleaching compn.,  
 whereby the complex **catalyzes** bleaching of the textile by atm.  
 oxygen after the treatment.

IC ICM C11D003-39

ICS D06L003-02

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 46, 67

ST bleaching **catalyst** org compd iron chloride complex prepn;



pyridinylmethy pyridinyl aminoethane ferrous chloride complex bleaching  
**catalyst**

IT Ligands  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (N,N-bis(pyridin-2-ylmethyl)-1,1-bis(pyridin-2-yl)-1-aminoethane; in  
 prepn. of a complex of org. compd./transition metal for use as  
**catalyst** in bleaching compn.)

IT Oxidation **catalysts**  
 (bleaching **catalyst**; prepn. of a complex of org.  
 compd./transition metal for use as **catalyst** in bleaching  
 compn.)

IT Transition metals, reactions  
 RL: CAT (**Catalyst use**); RCT (Reactant); RACT (Reactant or  
 reagent); USES (Uses)  
 (iron; in prepn. of a complex of org. compd./transition metal for use  
 as **catalyst** in bleaching compn.)

IT Detergents  
 (laundry; prepn. of a complex of org. compd./transition metal for use  
 as **catalyst** in bleaching compn.)

IT Bleaching agents  
 (prepn. of a complex of org. compd./transition metal for use as  
**catalyst** in bleaching compn.)

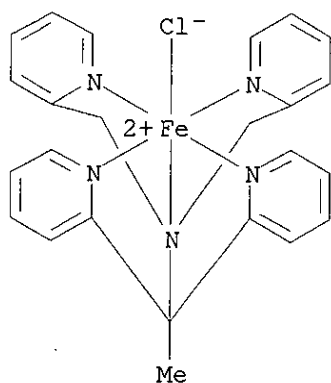
IT 328564-06-3P  
 RL: CAT (**Catalyst use**); IMF (**Industrial manufacture**);  
 MOA (Modifier or additive use); PREP (**Preparation**); USES (Uses)  
 (bleaching **catalysts**; prepn. of a **complex**  
 of org. compd./transition metal for use as **catalyst** in  
 bleaching compn.)

IT 223504-10-7P  
 RL: RCT (Reactant); SPN (**Synthetic preparation**);  
 PREP (**Preparation**); RACT (Reactant or reagent)  
 (ligand; in prepn. of a **complex** of org.  
 compd./transition metal for use as **catalyst** in  
 bleaching compn.)

IT 13478-10-9, Iron chloride (FeCl<sub>2</sub>) tetrahydrate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (transition metals; in prepn. of a complex of org. compd./transition  
 metal for use as **catalyst** in bleaching compn.)

IT 328564-06-3P  
 RL: RCT (Reactant); SPN (**Synthetic preparation**);  
 PREP (**Preparation**); RACT (Reactant or reagent); USES  
 (Uses)  
 (bleaching **catalysts**; prepn. of a **complex**  
 of org. compd./transition metal for use as **catalyst** in  
 bleaching compn.)

RN 328564-06-3 HCAPLUS  
 CN Iron(1+), chloro[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-bis[(2-  
 pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]-,  
 chloride, (OC-6-43)- (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:168095 HCAPLUS  
DN 134:209726  
TI Method of bleaching stained fabrics using bleaching **catalyst**  
-impregnated cloth  
IN Delroisse, Michel Gilbert Jose; Jones, David Andrew Ross; Smith, Richard  
George; Wells, John Francis  
PA Unilever PLC, UK; Unilever N.V.; Hindustan Lever Limited  
SO PCT Int. Appl., 77 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001016269	A1	20010308	WO 2000-EP7563	20000804
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	WO 2000012808	A1	20000309	WO 1999-GB2878	19990901
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,				

CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

BR 2000013592 A 20020507 BR 2000-13592 20000804  
 EP 1208187 A1 20020529 EP 2000-960390 20000804

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL

PRAI WO 1999-GB2878 W 19990901  
 GB 2000-4847 A 20000229  
 GB 1998-19046 A 19980901  
 GB 1999-6474 A 19990319  
 GB 1999-7713 A 19990401  
 WO 2000-EP7563 W 20000804

OS MARPAT 134:209726

AB A method for bleaching stained fabrics is provided by washing a stained fabric in an aq. wash liquor in the presence of a wash additive that comprises a ligand that forms a transition metal complex as bleach **catalyst**, the complex **catalyzing** bleaching of stains by atm. oxygen. The wash additive preferably comprises an iron complex comprising the ligand N,N-bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane. One or both of the wash additive and the wash liquor are substantially devoid of peroxygen bleach or a peroxy-based or -generating bleach system. The wash additive provides improved or broader stain profile bleaching.

IC ICM C11D003-39  
 ICS D06L003-02; C11D017-04

CC 46-5 (Surface Active Agents and Detergents)  
 Section cross-reference(s): 40

ST cloth bleaching **catalyst** impregnated stain remover; iron pentadentate ligand complex bleaching **catalyst** stain remover

IT Ligands  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (N,N-bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane; in method of bleaching stained fabrics using bleaching **catalyst** -impregnated cloth)

IT Transition metal complexes  
 RL: CAT (**Catalyst use**); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (in method of bleaching stained fabrics using bleaching **catalyst**-impregnated cloth)

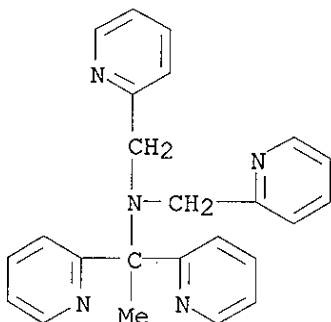
IT Oxidation **catalysts**  
 (method of bleaching stained fabrics using bleaching **catalyst** -impregnated cloth)

IT Detergents  
 (stain removers; method of bleaching stained fabrics using bleaching **catalyst**-impregnated cloth)

IT 7439-89-6DP, Iron, complex with N,N-Bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane, uses **223504-10-7DP**, N,N-Bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane, **complex** with iron  
 RL: CAT (**Catalyst use**); IMF (Industrial manufacture);  
 PREP (**Preparation**); USES (Uses)  
 (bleaching **catalyst**; method of bleaching stained fabrics using bleaching **catalyst** -impregnated cloth)

IT 7722-84-1, Hydrogen peroxide, uses  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (in method of bleaching stained fabrics using bleaching **catalyst**-impregnated cloth)

IT 223504-10-7DP, N,N-Bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-  
1-aminoethane, **complex** with iron  
RL: CAT (Catalyst use); IMF (Industrial manufacture);  
PREP (Preparation); USES (Uses)  
(bleaching catalyst; method of bleaching  
stained fabrics using bleaching catalyst  
-impregnated cloth)  
RN 223504-10-7 HCAPLUS  
CN 2-Pyridinemethanamine, .alpha.-methyl-.alpha.-2-pyridinyl-N,N-bis(2-  
pyridinylmethyl)- (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2001:168094 HCAPLUS  
DN 134:224342  
TI Method of pretreating and bleaching stained fabrics with a ligand/metal  
complex bleaching **catalyst**  
IN Delroisse, Michel Gilbert Jose; Jones, David Andrew Ross; Smith, Richard  
George; Wells, John Francis  
PA Unilever PLC, UK; Unilever N.V.; Hindustan Lever Limited  
SO PCT Int. Appl., 85 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 13

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001016268	A1	20010308	WO 2000-EP7561	20000804
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
WO 2000012808	A1	20000309	WO 1999-GB2878	19990901
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,				

TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD,  
RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

BR 2000013593 A 20020507 BR 2000-13593 20000804

EP 1208184 A1 20020529 EP 2000-951477 20000804

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL

PRAI WO 1999-GB2878 W 19990901

GB 2000-4844 A 20000229

GB 1998-19046 A 19980901

GB 1999-6474 A 19990319

GB 1999-7713 A 19990401

WO 2000-EP7561 W 20000804

OS MARPAT 134:224342

AB A method for bleaching stained fabrics is provided by pretreating the stained fabric, before washing, with a pretreatment compn. that comprises a ligand that forms a transition metal complex as bleach **catalyst**, the complex **catalyzing** bleaching of stains by atm. oxygen. The pretreatment compn. preferably comprises an iron complex comprising the ligand N,N-bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane. One or both of the pretreatment compn. and the wash liquor are substantially devoid of peroxygen bleach or a peroxy-based or -generating bleach system. The pretreatment provides improved or broader stain profile bleaching.

IC ICM C11D003-39

ICS D06L003-02

CC 46-5 (Surface Active Agents and Detergents)

ST iron pentadentate ligand complex bleaching **catalyst** stain remover

IT Ligands

RL: RCT (Reactant); RACT (Reactant or reagent)

(N,N-bis(pyridin-2-yl-methyl)-1,1-bis(pyridin-2-yl)-1-aminoethane; in pretreating and bleaching stained fabrics with a ligand/metal complex bleaching **catalyst**)

IT Oxidation **catalysts**

(in pretreating and bleaching stained fabrics with a ligand/metal complex bleaching **catalyst**)

IT Transition metal complexes

RL: CAT (**Catalyst use**); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(in pretreating and bleaching stained fabrics with a ligand/metal complex bleaching **catalyst**)

IT Sunflower oil

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(in pretreating and bleaching stained fabrics with a ligand/metal complex bleaching **catalyst**)

IT Detergents

(stain removers; in pretreating and bleaching stained fabrics with a ligand/metal complex bleaching **catalyst**)

IT Fatty acids, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(unsatd., oil; in pretreating and bleaching stained fabrics with a ligand/metal complex bleaching **catalyst**)

IT 328564-06-3P

RL: CAT (Catalyst use); IMF (Industrial manufacture);  
 PREP (Preparation); USES (Uses)  
 (bleaching catalyst; in pretreating and  
 bleaching stained fabrics with a ligand/metal  
 complex bleaching catalyst)

IT 223504-13-0P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture);  
 PREP (Preparation); USES (Uses)  
 (bleaching catalyst; pretreating and  
 bleaching stained fabrics with a ligand/metal  
 complex bleaching catalyst)

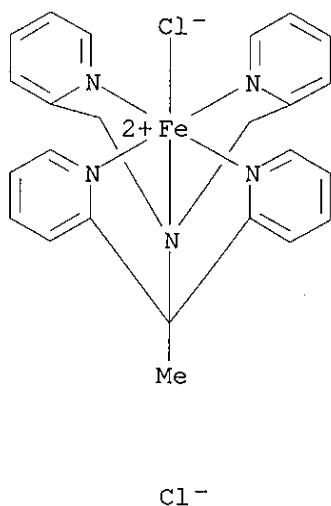
IT 7722-84-1, Hydrogen peroxide, uses  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
 use); USES (Uses)  
 (in pretreating and bleaching stained fabrics with a ligand/metal  
 complex bleaching catalyst)

IT 7758-94-3, Ferrous chloride 13933-23-8, Ferrous perchlorate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in pretreating and bleaching stained fabrics with a ligand/metal  
 complex bleaching catalyst)

IT 223504-10-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ligand; in pretreating and bleaching stained  
 fabrics with a ligand/metal complex  
 bleaching catalyst)

IT 328564-06-3P  
 RL: RCT (Reactant); RACT (Reactant or reagent);  
 PREP (Preparation); USES (Uses)  
 (bleaching catalyst; in pretreating and  
 bleaching stained fabrics with a ligand/metal  
 complex bleaching catalyst)

RN 328564-06-3 HCAPLUS  
 CN Iron(1+), chloro[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-bis[(2-  
 pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]-,  
 chloride, (OC-6-43)-(9CI) (CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

## ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2001:168088 HCAPLUS  
 DN 134:224341  
 TI Bleaching composition and method for bleaching a substrate such as  
 laundered fabrics with atmospheric oxygen or air  
 IN Carina, Riccardo Filippo; Fox, Stephen Paul; Kalmeijer, Robertus  
 Everardus; Karlin, Kenneth Daniel; Thijssen, Rob; Twisker, Robin Stefan  
 PA Unilever PLV, UK; Unilever NV; Hindustan Lever Limited  
 SO PCT Int. Appl., 49 pp.  
 CODEN: PIXXD2

DT Patent  
 LA English

FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001016261	A2	20010308	WO 2000-EP8078	20000816
	WO 2001016261	A3	20010830		
	W:		AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	WO 2000012667	A1	20000309	WO 1999-GB2876	19990901
	W:		AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
	WO 2000012808	A1	20000309	WO 1999-GB2878	19990901
	W:		AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM		
	RW:		GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG		
EP	1208185	A2	20020529	EP 2000-953179	20000816
	R:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL		
BR	2000013737	A	20020604	BR 2000-13737	20000816
PRAI	WO 1999-GB2876	W	19990901		
	WO 1999-GB2878	W	19990901		
	GB 2000-6961	A	20000322		
	GB 1998-19046	A	19980901		
	GB 1999-6474	A	19990319		
	GB 1999-7713	A	19990401		

GB 1999-7714 A 19990401  
 WO 2000-EP8078 W 20000816

OS MARPAT 134:224341

AB Bleaching a substrate comprises applying to the substrate, in an aq. medium, a specified ligand which forms a complex with a transition metal, for bleaching of the substrate by atm. O. An aq. bleaching compn. is substantially devoid of peroxygen bleach or a peroxy-based or peroxy-generating bleach system. The **catalyst** may be used in dry form, or in a liquor that is then dried, such as an aq. spray-on fabric treatment fluid or a wash liquor for laundry cleaning, or a nonaq. dry cleaning fluid or spray-on aerosol fluid. A typical complex of tris(3-methylpyridin-2-yl methyl)amine ligand complex with Fe(ClO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O showed good performance (curry oil stained fabric .delta.E 17) in alk. wash.

IC ICM C11D

CC 46-5 (Surface Active Agents and Detergents)

Section cross-reference(s): 67

ST bleaching laundered fabric atm oxygen transition metal complex

**catalyst**

IT Bleaching

Oxidation **catalysts**

(compn. for bleaching a laundered fabrics with atm. oxygen or air)

IT Transition metal complexes

RL: **CAT (Catalyst use)**; USES (Uses)

(compn. for bleaching a laundered fabrics with atm. oxygen or air)

IT Ligands

RL: **CAT (Catalyst use)**; IMF (Industrial manufacture); RCT

(Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(compn. for bleaching a laundered fabrics with atm. oxygen or air)

IT 7439-89-6D, Iron, tris(methylpyridinylmethyl)amine complexes, uses  
 7439-96-5D, Manganese, tris(methylpyridinylmethyl)amine complexes, uses  
 161647-08-1D, iron and manganese complexes 202192-54-9D, iron and  
 manganese complexes 329185-39-9D, iron complex

RL: **CAT (Catalyst use)**; USES (Uses)

(compn. for bleaching a laundered fabrics with atm. oxygen or air)

IT 16858-01-8P, Tris(pyridin-2-ylmethyl)amine 25599-08-0P

161647-08-1P 202192-54-9P

RL: IMF (Industrial manufacture); PREP (Preparation)

(ligand; compn. for bleaching a laundered fabrics  
 with atm. oxygen or air)

IT 329185-38-8P

RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; compn. for bleaching a laundered fabrics  
 with atm. oxygen or air)

IT 16858-01-8P, Tris(pyridin-2-ylmethyl)amine

RL: IMF (Industrial manufacture); RCT (Reactant);

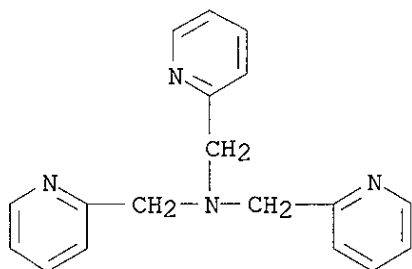
PREP (Preparation); RACT (Reactant or reagent)

(ligand; compn. for bleaching a laundered fabrics  
 with atm. oxygen or air)

RN 16858-01-8 HCAPLUS

CN 2-Pyridinemethanamine, N,N-bis(2-pyridinylmethyl)- (9CI) (CA INDEX NAME)





- L26 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 2000:849131 HCAPLUS  
 DN 134:63164  
 TI Electrochemical study of binuclear manganese complexes as **catalysts** in Kraft pulp bleaching  
 AU Tzedakis, T.  
 CS Laboratoire de Genie Chimique, UMR CNRS 5503, Universite Paul Sabatier, Toulouse, 31062, Fr.  
 SO Electrochimica Acta (2000), 46(1), 99-109  
 CODEN: ELCAAV; ISSN: 0013-4686  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 AB The redox behavior, stability and **catalytic** properties of various binuclear manganese-ligand complexes was examd. by electrochem. thin layer and potential measurements. Some of the complexes studied were irreversibly degraded by oxidn. at high potentials, while others were dissocd. in aq. media to give the monomeric form. Otherwise, most of these complexes occur in acid-base equil., through protonation of the ligand amino functions. The manganese-tris(2-pyridylmethyl)amine complex is stable without dissochn. at pH 3-5 and temps. of 15-80.degree.. The results show that after several successive scans in the 0-1 V range the complex can be oxidized or reduced without irreversible degrdn.; it can be used in **catalytic** amts. (0.1 g of complex per g Kraft pulp) for lignin oxidn. by hydrogen peroxide.  
 CC 72-2 (Electrochemistry)  
 Section cross-reference(s): 43, 67, 68, 78  
 ST electrochem study binuclear manganese complex **catalyst** Kraft pulp bleaching; redox electrochem manganese binuclear complex; oxidn electrochem manganese binuclear complex; redn electrochem manganese binuclear complex; lignin oxidn Kraft pulp bleaching manganese binuclear complex **catalyst**  
 IT Cellulose pulp  
 Pulp bleaching  
 (electrochem. study of binuclear manganese complexes as **catalysts** in Kraft pulp bleaching)  
 IT Redox reaction  
 (electrochem.; of Mn mononuclear and binuclear complexes on C film in Na2SO4 soln.: electrochem. study of binuclear manganese complexes as **catalysts** in Kraft pulp bleaching)  
 IT Oxidation **catalysts**  
 (manganese binuclear complexes for lignin oxidn. by H2O2 and in Kraft pulp bleaching)  
 IT Oxidation potential

- Reduction potential  
(of Mn mononuclear and binuclear complexes in Na<sub>2</sub>SO<sub>4</sub> soln.:  
electrochem. study of binuclear manganese complexes as  
**catalysts** in Kraft pulp bleaching)
- IT Oxidation, electrochemical  
Reduction, electrochemical  
(of Mn mononuclear and binuclear complexes on C film in Na<sub>2</sub>SO<sub>4</sub> soln.:  
electrochem. study of binuclear manganese complexes as  
**catalysts** in Kraft pulp bleaching)
- IT 157876-75-0 314062-65-2 **314062-66-3** 314062-69-6  
RL: FMU (Formation, unclassified); PRP (Properties); **RCT**  
(**Reactant**); FORM (Formation, nonpreparative); **RACT** (**Reactant or**  
**reagent**)  
(electrochem. formation and oxidn. on carbon film in Na<sub>2</sub>SO<sub>4</sub> soln.:  
electrochem. study of binuclear manganese **complexes** as  
**catalysts** in Kraft pulp **bleaching**)
- IT 157876-73-8 314062-67-4 **314062-68-5**  
RL: FMU (Formation, unclassified); PRP (Properties); **RCT**  
(**Reactant**); FORM (Formation, nonpreparative); **RACT** (**Reactant or**  
**reagent**)  
(electrochem. formation and redn. on carbon film in Na<sub>2</sub>SO<sub>4</sub> soln.:  
electrochem. study of binuclear manganese **complexes** as  
**catalysts** in Kraft pulp **bleaching**)
- IT 7440-44-0, Carbon, uses  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(electrochem. oxidn. and redn. of Mn mononuclear and binuclear  
complexes on C film in Na<sub>2</sub>SO<sub>4</sub> soln.: electrochem. study of binuclear  
manganese complexes as **catalysts** in Kraft pulp bleaching)
- IT 7757-82-6, Sodium sulfate (Na<sub>2</sub>SO<sub>4</sub>), uses  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(electrochem. oxidn. and redn. of Mn mononuclear and binuclear  
complexes on C film in Na<sub>2</sub>SO<sub>4</sub> soln.: electrochem. study of binuclear  
manganese complexes as **catalysts** in Kraft pulp bleaching)
- IT 47883-04-5 146261-74-7 191339-53-4 **314062-64-1**  
RL: **CAT** (**Catalyst use**); FMU (Formation, unclassified); PRP  
(Properties); **RCT** (**Reactant**); FORM (Formation, nonpreparative);  
**RACT** (**Reactant or reagent**); USES (Uses)  
(electrochem. oxidn. and redn. on carbon film in Na<sub>2</sub>SO<sub>4</sub> soln.:  
electrochem. study of binuclear manganese **complexes** as  
**catalysts** in Kraft pulp **bleaching**)
- IT 366-18-7D, 2,2'-Bipyridine, manganese binuclear complexes 7439-96-5D,  
Manganese, binuclear complexes with bipyridine or tris(pyridylmethyl)amine  
or tris(quinolinylmethyl)amine or bis(pyridylmethyl)ethanediamine Me  
derivs., uses **16858-01-8D**, Tris(2-pyridylmethyl)amine, manganese  
binuclear **complexes** 136768-57-5D, manganese binuclear  
complexes **154823-45-7D**, manganese binuclear **complexes**  
186310-68-9D, manganese binuclear complexes  
RL: **CAT** (**Catalyst use**); PRP (Properties); **RCT** (**Reactant**)  
; **RACT** (**Reactant or reagent**); USES (Uses)  
(electrochem. study of binuclear manganese **complexes** as  
**catalysts** in Kraft pulp **bleaching**)
- IT 7722-84-1, Hydrogen peroxide, reactions 9005-53-2, Lignin, reactions  
RL: **RCT** (**Reactant**); **RACT** (**Reactant or reagent**)  
(manganese binuclear complexes as **catalysts** for lignin oxidn.  
by H<sub>2</sub>O<sub>2</sub>)
- IT 314062-70-9 314062-71-0 **314062-72-1** 314062-77-6  
RL: PRP (Properties); **RCT** (**Reactant**); **RACT** (**Reactant or**  
**reagent**)

(oxidn. potential in Na<sub>2</sub>SO<sub>4</sub> soln.: electrochem. study of binuclear manganese **complexes** as **catalysts** in Kraft pulp **bleaching**)

IT 314062-73-2 314062-74-3 **314062-75-4** 314062-76-5

RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)

(redn. potential in Na<sub>2</sub>SO<sub>4</sub> soln.: electrochem. study of binuclear manganese **complexes** as **catalysts** in Kraft pulp **bleaching**)

IT 314062-66-3

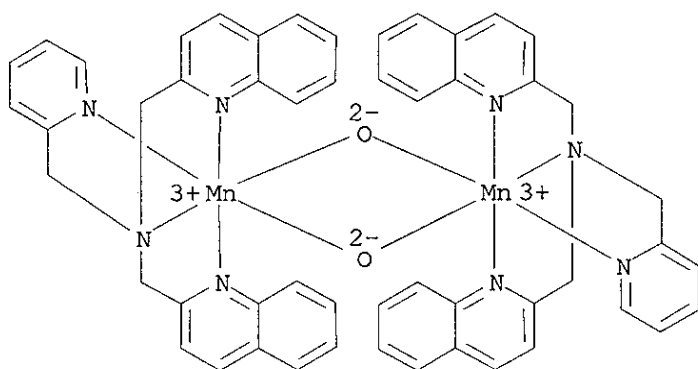
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); RACT (Reactant or reagent);

RACT (Reactant or reagent); RACT (Reactant or reagent)

(electrochem. formation and oxidn. on carbon film in Na<sub>2</sub>SO<sub>4</sub> soln.: electrochem. study of binuclear manganese **complexes** as **catalysts** in Kraft pulp **bleaching**)

RN 314062-66-3 HCAPLUS

CN Manganese(2+), di- $\mu$ -oxobis[N-[(2-pyridinyl-.kappa.N)methyl]-N-[(2-quinolinyl-.kappa.N)methyl]-2-quinolinemethanamine-.kappa.N1,.kappa.N2]di-(9CI) (CA INDEX NAME)



RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2000:725739 HCAPLUS

DN 133:311158

TI Composition containing **catalysts** for bleaching laundered fabrics with atmospheric oxygen

IN Carina, Riccardo Filippo; Feringa, Bernard Lucas; Hage, Ronald; Hemmert, Catherine; Koek, Jean Hypolites; Lacrois, Rene Marcel; Meunier, Bernard; Renz, Michael; Roelfes, Johannes Gerhardus; Schudde, Ebe Pieter; Thijssen, Rob; Twisker, Robin Stefan; Zondervan, Charon

PA Unilever PLC, UK; Unilever N. V.; Hindustan Lever Ltd.

SO PCT Int. Appl., 64 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000060044	A1	20001012	WO 2000-EP2590	20000322

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2000012667 A1 20000309 WO 1999-GB2876 19990901

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2000012808 A1 20000309 WO 1999-GB2878 19990901

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1165738 A1 20020102 EP 2000-918830 20000322

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

BR 2000009457 A 20020108 BR 2000-9457 20000322

ZA 2001006939 A 20020822 ZA 2001-6939 20010822

PRAI GB 1999-7713 A 19990401

GB 1999-7714 A 19990401

WO 1999-GB2876 W 19990901

WO 1999-GB2878 W 19990901

GB 2000-4850 A 20000229

GB 1998-19046 A 19980901

GB 1999-6474 A 19990319

WO 2000-EP2590 W 20000322

OS MARPAT 133:311158

AB Bleaching a substrate applying to the substrate, in an aq. medium, a specified ligand from a selected class which forms a complex with a transition metal, the complex **catalyzing** bleaching of the substrate by atm. O. An aq. bleaching compn. is substantially devoid of peroxygen bleach or a peroxy-based or generating bleach system. Also there is a dry textile having a **catalyst** applied or deposited thereon, where bleaching by atm. O is **catalyzed** on the textile.

IC ICM C11D003-395

ICS C07D213-38; C07D213-55; C07D401-14; C07F015-02; C07F013-00; D06L003-02

CC 46-5 (Surface Active Agents and Detergents)

Section cross-reference(s): 67

ST bleaching laundered fabric atm oxygen transition metal complex

**catalyst**

IT Bleaching

Oxidation **catalysts**

(compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

IT Transition metal complexes

RL: **CAT (Catalyst use); USES (Uses)**

(compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 223504-16-3 302541-71-5 302541-75-9 302541-78-2 302541-81-7  
302541-84-0 302541-87-3 302541-91-9 302541-93-1 302541-95-3  
302541-97-5 302541-99-7 302542-01-4 302542-03-6 302542-05-8  
302542-07-0

RL: **CAT (Catalyst use); USES (Uses)**

(compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 35047-29-1P 57964-16-6P, N,N'-Bis(pyrid-2-ylmethyl)-1,3-diaminopropane  
58088-50-9P 117106-10-2P 302541-67-9P 302541-68-0P 302541-79-3P  
302541-88-4P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 50-00-0, Formaldehyde, reactions 74-88-4, Methyl iodide, reactions  
95-54-5, o-Phenylene diamine, reactions 109-04-6, 2-Pyridylbromide  
109-76-2, 1,3-Diaminopropane 937-14-4, 3-Chloroperoxybenzoic acid  
1121-60-4, Pyridine-2-carboxaldehyde 1539-42-0, Di-2-pyridyl methyl  
amine 4377-33-7, 2-Picolylchloride 5470-70-2, Methyl  
6-methylnicotinate 19437-26-4, Di-2-pyridylketone 49668-90-8  
141213-10-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 260395-25-3

RL: **CAT (Catalyst use); USES (Uses)**

(ligand; compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 205827-45-8P 302541-69-1P 302541-73-7P  
302541-76-0P 302541-82-8P 302541-85-1P 302541-89-5P

RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 205827-45-8P

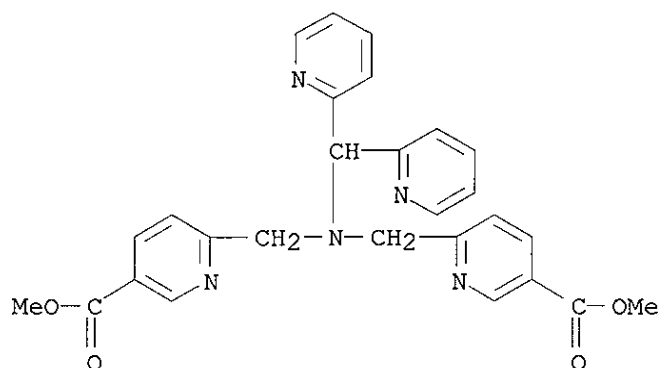
RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; compn. contg. **catalysts** for bleaching laundered fabrics with atm. oxygen)

RN 205827-45-8 HCAPLUS

CN 3-Pyridinecarboxylic acid, 6,6'-[[di-2-pyridinylmethyl]imino]bis(methylen  
e)]bis-, dimethyl ester (9CI) (CA INDEX NAME)



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:725738 HCAPLUS  
DN 133:311157  
TI Composition containing transition metal complex for **catalytically**  
bleaching laundry fabrics with atmospheric oxygen  
IN Appel, Adrianus Cornelis Maria; Delroisse, Michel Gilbert Jose; Hage,  
Ronald; Tetard, David; Twisker, Robin Stefan  
PA Unilever PLC, UK; Unilever N. V.; Hindustan Lever Limited  
SO PCT Int. Appl., 70 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000060043	A1	20001012	WO 2000-EP2587	20000322
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	WO 2000012667	A1	20000309	WO 1999-GB2876	19990901
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	WO 2000012808	A1	20000309	WO 1999-GB2878	19990901
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,				

MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,  
 TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD,  
 RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
 ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

ZA 2001006939 A 20020822 ZA 2001-6939 20010822  
 PRAI GB 1999-7713 A 19990401  
 GB 1999-7714 A 19990401  
 WO 1999-GB2876 W 19990901  
 WO 1999-GB2878 W 19990901  
 GB 2000-4858 A 20000229  
 GB 1998-19046 A 19980901  
 GB 1999-6474 A 19990319  
 OS MARPAT 133:311157  
 AB The title method comprises applying to the substrate, in an aq. bleaching  
 compn. contg. a ligand complex with a transition metal, the complex  
**catalyzing** bleaching of the substrate by atm. O. Also the aq.  
 bleaching compn. is substantially devoid of peroxygen bleach or a  
 peroxy-based or -generating bleach system. Tomato stained cloths were  
 bleached in the presence of a cleaner contg. surfactant and 1.0 .mu.M  
 [Fe(N-methyl-N',N'-tris(3-methylpyridin-2-ylmethyl)ethylenediamine)Cl] (P  
 F6) (prepn. given), showing a color difference (pH 8) 17; vs. 3 for a blank  
 and 2 using peroxide source bleach.  
 IC ICM C11D003-395  
 ICS C07D213-38; C07F015-02; C07F013-00; D06L003-02; C07D235-30;  
 C07D405-14  
 CC 46-5 (Surface Active Agents and Detergents)  
 Section cross-reference(s): 67  
 ST bleaching laundered fabric atm oxygen transition metal complex  
**catalyst**; pyridinylmethyl ethylenediamine iron complex bleaching  
**catalyst** manuf  
 IT Bleaching  
 Oxidation **catalysts**  
 (compn. contg. transition metal complex for **catalytically**  
 bleaching laundry fabrics with atm. oxygen)  
 IT Transition metal complexes  
 RL: **CAT (Catalyst use)**; IMF (Industrial manufacture); PREP  
 (Preparation); USES (Uses)  
 (compn. contg. transition metal complex for **catalytically**  
 bleaching laundry fabrics with atm. oxygen)  
 IT 7439-89-6D, Iron, polyamine complexes, uses 7439-96-5D, Manganese,  
 polyamine complexes, uses 7440-48-4D, Cobalt, polyamine complexes, uses  
 302542-45-6D, transition metal complexes 302542-66-1 302542-70-7  
 302542-74-1 302542-77-4 302542-81-0 302542-84-3 302542-86-5  
 302542-88-7 302542-90-1 302542-92-3 302542-94-5 302542-96-7  
 302542-98-9 302543-00-6 302543-02-8 302543-04-0 302543-06-2  
 302543-08-4 302543-10-8 302543-12-0 302543-14-2 302543-16-4  
 302543-18-6 302543-20-0 302543-22-2 302543-24-4 302543-26-6  
 302543-28-8 302543-30-2 302543-32-4 302543-34-6 302543-37-9  
 302543-39-1 302543-41-5 302543-43-7 302543-46-0 302543-48-2  
 302543-50-6  
 RL: **CAT (Catalyst use)**; USES (Uses)  
 (compn. contg. transition metal complex for **catalytically**  
 bleaching laundry fabrics with atm. oxygen)  
 IT 260395-33-3P 302542-43-4DP, iron dinuclear  
 complex 302543-53-9P 302543-55-1P  
 302543-57-3P

RL: CAT (Catalyst use); IMF (Industrial manufacture);

PREP (Preparation); USES (Uses)

(compn. contg. transition metal **complex** for  
**catalytically bleaching** laundry fabrics with atm.  
oxygen)

IT 110-72-5P 768-61-6P, 2-Hydroxymethyl-5-ethyl pyridine 772-71-4P,  
2-Acetoxymethyl-5-methyl pyridine 3010-05-7P, N-Benzyl amino  
acetonitrile 4152-09-4P 5700-58-3P 19815-35-1P 21852-60-8P,  
2-Acetoxymethyl-5-ethyl pyridine 22940-71-2P, 2-Hydroxymethyl-5-methyl  
pyridine 24426-40-2P, N-Ethyl amino acetonitrile 52814-41-2P,  
2-Acetoxymethyl-3-methyl pyridine 63071-09-0P, 2-Hydroxymethyl-3-methyl  
pyridine 302543-51-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(compn. contg. transition metal **complex** for **catalytically**  
**bleaching** laundry fabrics with atm. oxygen)

IT 50-00-0, Formaldehyde, reactions 75-04-7, Ethylamine, reactions  
98-01-1, Furan-2-carbaldehyde, reactions 100-46-9, N-Benzyl amine,  
reactions 103-76-4, 1-Piperazineethanol 104-90-5, 5-Ethyl-2-methyl  
pyridine 109-81-9 143-33-9, Sodium cyanide (NaCN) 583-61-9,  
2,3-Lutidine 589-93-5, 2,5-Lutidine 4377-33-7, Picolyl chloride  
4377-43-9 4760-34-3 7467-35-8 13478-10-9, Iron dichloride  
tetrahydrate 16941-11-0, Ammonium hexafluorophosphate 21324-39-0,  
Sodium hexafluorophosphate 34451-31-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(compn. contg. transition metal **complex** for **catalytically**  
**bleaching** laundry fabrics with atm. oxygen)

IT 104170-15-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(ligand precursor; compn. contg. transition metal  
**complex** for **catalytically bleaching** laundry  
fabrics with atm. oxygen)

IT 172300-86-6 260395-29-7 260395-31-1 302542-45-6 302543-35-7  
302543-44-8

RL: CAT (Catalyst use); USES (Uses)

(ligand; compn. contg. transition metal **complex** for  
**catalytically bleaching** laundry fabrics with atm. oxygen)

IT 260395-26-4P 260395-27-5P 260395-28-6P

260395-30-0P 302542-43-4P 302542-62-7P

RL: CAT (Catalyst use); IMF (Industrial manufacture);

PREP (Preparation); USES (Uses)

(ligand; compn. contg. transition metal **complex** for  
**catalytically bleaching** laundry fabrics with atm.  
oxygen)

IT 302542-35-4P

RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; compn. contg. transition metal **complex** for  
**catalytically bleaching** laundry fabrics with atm.  
oxygen)

IT 260395-33-3P

RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(compn. contg. transition metal **complex** for  
**catalytically bleaching** laundry fabrics with atm.  
oxygen)

RN 260395-33-3 HCAPLUS

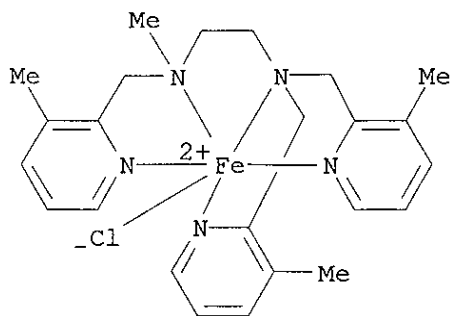
CN Iron(1+), chloro[N-methyl-N,N',N'-tris[(3-methyl-2-pyridinyl)-



.kappa.N)methyl}-1,2-ethanediamine-.kappa.N,.kappa.N']-,  
hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

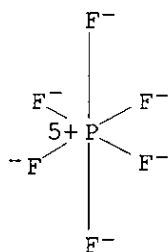
CM 1

CRN 260395-32-2  
CMF C24 H31 Cl Fe N5  
CCI CCS



CM 2

CRN 16919-18-9  
CMF F6 P  
CCI CCS



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:335516 HCAPLUS  
DN 132:336136  
TI Detergent bleaching composition for bleaching/cleaning of fabrics  
IN Delroisse, Michel Gilbert Jose; Feringa, Bernard Lucas; Hage, Ronald;  
Hermant, Roelant Mathijs; Kalmeijer, Robertus Everardus; Koek, Jean  
Hypolites; Lamers, Christiaan; Rispens, Minze; Russell, Stephen William;  
Van Vliet, Ronaldus Theodorus Leonardus; Whittaker, Jane  
PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Limited  
SO PCT Int. Appl., 38 pp.  
CODEN: PIXXD2  
DT Patent  
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000027975	A1	20000518	WO 1999-EP8324	19991025
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1008645	A1	20000614	EP 1998-309168	19981110
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 9915192	A	20010814	BR 1999-15192	19991025
	AU 749526	B2	20020627	AU 2000-13780	19991025
	US 6165963	A	20001226	US 1999-433156	19991103
PRAI	EP 1998-309168	A	19981110		
	WO 1999-EP8324	W	19991025		
OS	MARPAT 132:336136				
AB	A detergent bleaching <b>catalyst</b> comprises a compd. including a specified pentadentate N-contg. ligand. The compd. can activate H2O2 or peroxyacids and provides favorable stain removal properties, particularly in the presence of Fe, Mn or Cu ions. An improved stability in alk. aq. environment was obtained, in particular at the peroxy compd. concns. generally present in the fabric washing liquor.				
IC	ICM C11D003-395				
	ICS D06L003-02				
CC	46-4 (Surface Active Agents and Detergents)				
ST	iron complex bleach oxidn <b>catalyst</b> ; manganese complex bleach oxidn <b>catalyst</b> ; copper complex bleach oxidn <b>catalyst</b>				
IT	Peroxy acids				
	RL: TEM (Technical or engineered material use); USES (Uses) (bleach; metal complex bleach and oxidn. <b>catalysts</b> for detergent)				
IT	Detergents				
	(metal complex bleach and oxidn. <b>catalysts</b> for)				
IT	Bleaching agents				
	Oxidation <b>catalysts</b>				
	(metal complex bleach and oxidn. <b>catalysts</b> for detergent)				
IT	15630-89-4, Sodium percarbonate				
	RL: TEM (Technical or engineered material use); USES (Uses) (bleach precursor; metal complex bleach and oxidn. <b>catalysts</b> for detergent)				
IT	7722-84-1, Hydrogen peroxide, uses				
	RL: TEM (Technical or engineered material use); USES (Uses) (bleach; metal complex bleach and oxidn. <b>catalysts</b> for detergent)				
IT	260395-26-4P 260395-27-5P 260395-28-6P 260395-29-7P 260395-30-0P 260395-31-1P				
	RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (ligand; metal complex bleach and oxidn. <b>catalysts</b> for detergent)				
IT	7439-89-6D, Iron, complex with N-contg. ligand, salt, uses				
	RL: CAT (Catalyst use); USES (Uses)				

(metal complex bleach and oxidn. **catalysts** for detergent)

IT 110-72-5P 768-61-6P, 2-Hydroxymethyl-5-ethyl pyridine 772-71-4P,  
2-Acetoxymethyl-5-methyl pyridine 3010-05-7P, N-Benzyl amino  
acetonitrile 4152-09-4P 21852-60-8P, 2-Acetoxymethyl-5-ethyl pyridine  
22940-71-2P, 2-Hydroxymethyl-5-methyl pyridine 24426-40-2P, N-Ethyl  
amino acetonitrile 52814-41-2P, 2-Acetoxymethyl-3-methyl pyridine  
63071-09-0P, 2-Hydroxymethyl-3-methyl pyridine  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(metal complex bleach and oxidn. **catalysts** for detergent)

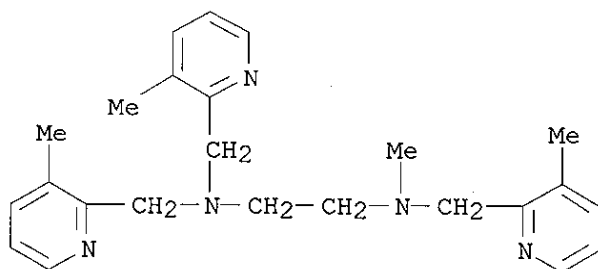
IT 75-04-7, Ethylamine, reactions 100-46-9, N-Benzyl amine, reactions  
104-90-5, 5-Ethyl-2-methyl pyridine 109-81-9 111-41-1 143-33-9,  
Sodium cyanide 583-61-9, 2,3-Lutidine 589-93-5, 2,5-Lutidine  
RL: RCT (Reactant); RACT (Reactant or reagent)

(metal complex bleach and oxidn. **catalysts** for detergent)

IT 260395-26-4P  
RL: IMF (Industrial manufacture); RCT (Reactant);  
PREP (Preparation); RACT (Reactant or reagent)  
(ligand; metal complex bleach and oxidn.  
**catalysts** for detergent)

RN 260395-26-4 HCAPLUS

CN 1,2-Ethanediamine, N-methyl-N,N',N'-tris[(3-methyl-2-pyridinyl)methyl]-  
(9CI) (CA INDEX NAME)



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:335113 HCAPLUS  
DN 132:323323  
TI Metal complex bleach and oxidation **catalysts**  
IN Delroisse, Michel Gilbert Jose; Hage, Ronald; Kalmeijer, Robertus  
Everardus; Lamers, Christiaan; Russell, Stephen William; Whittaker, Jane;  
Feringa, Bernard Lucas; Hermant, Roelant Mathijs; Koek, Jean Hypolites;  
Rispen, Minze Theunis; Van Vliet, Ronaldus Theodorus Leonardus  
PA Unilever PLC, UK; Unilever N.V.  
SO Eur. Pat. Appl., 20 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1001009	A1	20000517	EP 1998-309169	19981110
	EP 1001009	B1	20030903		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO  
 WO 2000027976 A1 20000518 WO 1999-EP8325 19991025  
 W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 BR 9915193 A 20010814 BR 1999-15193 19991025  
 EP 1129170 A1 20010905 EP 1999-955934 19991025  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO  
 AU 749674 B2 20020704 AU 2000-12682 19991025  
 US 6140294 A 20001031 US 1999-433157 19991103  
 PRAI EP 1998-309169 A 19981110  
 WO 1999-EP8325 W 19991025  
 OS MARPAT 132:323323  
 AB A bleach and oxidn. **catalyst** is provided comprising a **catalytically** active iron, manganese or copper complex including a specified pentadentate nitrogen-contg. ligand. The metal complex can activate hydrogen peroxide or peroxyacids and provides favorable stain removal properties. In addn., a considerably improved stability of these metal complex compds. in alk. aq. environment has been obtained, in particular at the peroxy compd. concns. generally present in the fabric washing liquor.  
 IC ICM C11D003-395  
 ICS D06L003-02; C07F015-02; C07F001-08; C07F013-00; B01J031-18  
 CC 46-4 (Surface Active Agents and Detergents)  
 ST iron complex bleach oxidn **catalyst**; manganese complex bleach oxidn **catalyst**; copper complex bleach oxidn **catalyst**  
 IT Peroxy acids  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (bleach; metal complex bleach and oxidn. **catalysts**)  
 IT Bleaching agents  
 Oxidation **catalysts**  
 (metal complex bleach and oxidn. **catalysts**)  
 IT 15630-89-4, Sodium percarbonate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (bleach precursor; metal complex bleach and oxidn. **catalysts**)  
 IT 7722-84-1, Hydro-gen peroxide, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (bleach; metal complex bleach and oxidn. **catalysts**)  
 IT 260395-33-3P 260395-35-5P 260395-37-7P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture);  
 PREP (Preparation); USES (Uses)  
 (ligand; metal complex bleach and oxidn. **catalysts**)  
 IT 260395-26-4P 260395-27-5P 260395-28-6P  
 260395-29-7P 260395-30-0P 260395-31-1P  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (ligand; metal complex bleach and oxidn. **catalysts**)  
 IT 21324-39-0, Sodium hexafluorophosphate  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(ligand; metal complex bleach and oxidn. catalysts)

IT 110-72-5P 768-61-6P, 2-Hydroxymethyl-5-ethyl pyridine 772-71-4P,  
2-Acetoxyethyl-5-methyl pyridine 3010-05-7P, N-Benzyl amino  
acetonitrile 4152-09-4P 21852-60-8P, 2-Acetoxyethyl-5-ethyl pyridine  
22940-71-2P, 2-Hydroxymethyl-5-methyl pyridine 24426-40-2P, N-Ethyl  
amino acetonitrile 52814-41-2P, 2-Acetoxyethyl-3-methyl pyridine  
63071-09-0P, 2-Hydroxymethyl-3-methyl pyridine  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(metal complex bleach and oxidn. catalysts)

IT 75-04-7, Ethylamine, reactions 100-46-9, N-Benzyl amine, reactions  
104-90-5, 5-Ethyl-2-methyl pyridine 143-33-9, Sodium cyanide 589-93-5,  
2,5-Lutidine  
RL: RCT (Reactant); RACT (Reactant or reagent)

(metal complex bleach and oxidn. catalysts)

IT 260395-33-3P

RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; metal complex bleach and oxidn. catalysts)

RN 260395-33-3 HCAPLUS

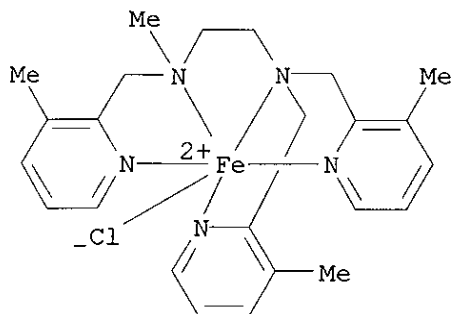
CN Iron(1+), chloro[N-methyl-N,N',N'-tris[(3-methyl-2-pyridinyl-  
.kappa.N)methyl]-1,2-ethanediamine-.kappa.N,.kappa.N']-,  
hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 260395-32-2

CMF C24 H31 Cl Fe N5

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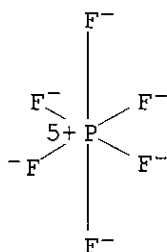


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN

AN 2000:161523 HCAPLUS

DN 132:209505

TI Bleaching fabrics by atmospheric oxygen in the presence of transition metal complex **catalysts**

IN Appel, Adrianus Cornelis Maria; Carina, Riccardo Filippo; Delroisse, Michel Gilbert Jose; Feringa, Bernard Lucas; Girerd, Jean-jacques; Hage, Ronald; Kalmeijer, Robertus Everardus; Martens, Constantinus Franciscus; Peelen, Jacobus Carolina Johannes; Que, Lawrence; Swarthoff, Ton; Tetard, David; Thornthwaite, David; Tiwari, Laxmikant; Thijssen, Rob; Twisker, Robin Stefan; Veerman, Simon Marinus; Van Der Voet, Gerrit; Smith, Richard George

PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Limited

SO PCT Int. Appl., 86 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 13

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000012808	A1	20000309	WO 1999-GB2878	19990901
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	AU 9956370	A1	20000321	AU 1999-56370	19990901
	US 6245115	B1	20010612	US 1999-388171	19990901
	EP 1109965	A1	20010627	EP 1999-943085	19990901
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	WO 2000060043	A1	20001012	WO 2000-EP2587	20000322
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 US 6617299 B1 20030909 US 2000-539756 20000331  
 WO 2001016268 A1 20010308 WO 2000-EP7561 20000804  
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 EP 1208184 A1 20020529 EP 2000-951477 20000804  
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 EP 1208187 A1 20020529 EP 2000-960390 20000804  
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 WO 2001016271 A1 20010308 WO 2000-EP8076 20000816

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 WO 2001016261 A3 20010830  
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 BR 2000013744 A 20020514 BR 2000-13744 20000816  
 EP 1208185 A2 20020529 EP 2000-953179 20000816  
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 EP 1208186 A1 20020529 EP 2000-958470 20000816  
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 AU 757351 B2 20030220 AU 2000-69973 20000816  
 US 6302921 B1 20011016 US 2000-649668 20000829  
 US 6451752 B1 20020917 US 2000-650139 20000829  
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 US 2003045442 A1 20030306 US 2002-112992 20020401  
 PRAI GB 1998-19046 A 19980901  
 GB 1999-6474 A 19990319  
 GB 1999-7713 A 19990401  
 GB 1999-7714 A 19990401  
 WO 1999-GB2876 W 19990901  
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 GB 2000-4844 A 20000229  
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 GB 2000-4858 A 20000229  
 GB 2000-4990 A 20000301  
 GB 2000-6961 A 20000322  
 WO 2000-EP2590 W 20000322  
 WO 2000-EP7561 W 20000804  
 WO 2000-EP7563 W 20000804  
 WO 2000-EP8075 W 20000816  
 WO 2000-EP8076 W 20000816  
 WO 2000-EP8078 W 20000816  
 US 2000-650134 A3 20000829



OS MARPAT 132:209505

AB Fabrics such as laundered fabrics are bleached by atm. O by treatment with transition metal complexes, that are applied in the dry form or in aq. solns. (such as in laundering) or in nonaq. solns. (such in dry cleaning). The method can confer cleaning benefits to the textile after the treatment. A typical complex was manufd. by reaction of 2-pyridyl ketone oxime 1 h in EtOH-NH4OH contg. NH4OAc with Zn at reflux, reaction of the resulting bis(pyridin-2-yl)methylamine 40 h with picolyl chloride hydrochloride in aq. NaOH, redn. of the perchlorate salt of the 2nd intermediate with LiAlH4, lithiation of the 3rd intermediate with BuLi, methylation of 4th intermediate with MeI, and complexation of the resulting ligand with Fe(ClO4)2.6H2O.

IC ICM D06L003-02

CC 46-5 (Surface Active Agents and Detergents)

Section cross-reference(s): 78

ST bleaching laundered fabric atm oxygen transition metal complex  
**catalyst**; pyridinylmethyl bispyridinylaminoethane iron complex  
**catalyst** manuf bleaching laundered fabric

IT Bleaching

Oxidation **catalysts**

(compns. contg. transition metal complex **catalysts** for  
 bleaching laundered fabrics with atm. oxygen)

IT Transition metal complexes

RL: **CAT (Catalyst use)**; USES (Uses)

(compns. contg. transition metal complex **catalysts** for  
 bleaching laundered fabrics with atm. oxygen)

IT 16941-11-0, Ammonium hexafluorophosphate 21324-39-0, Sodium  
 hexafluorophosphate

RL: RCT (Reactant); RACT (Reactant or reagent)

(complex precursor; compns. contg. transition metal complex  
**catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 7439-96-5D, Manganese, bis(pyridinylmethyl)dimethylethylenediamine  
 complex, uses 61920-87-4 108114-13-2 116633-52-4 129766-11-6  
 129766-12-7 133523-08-7 136074-05-0 136768-57-5D, manganese complex  
 157966-71-7 167695-89-8 260395-40-2 260395-42-4 260395-44-6  
 260416-70-4 260416-73-7

RL: **CAT (Catalyst use)**; USES (Uses)

(compns. contg. transition metal complex **catalysts** for  
 bleaching laundered fabrics with atm. oxygen)

IT 223504-13-0P 223504-16-3P 252981-14-9P  
 252981-15-0P 260395-33-3P 260395-35-5P  
 260395-37-7P 260395-39-9P

RL: **CAT (Catalyst use)**; IMF (Industrial manufacture);**PREP (Preparation)**; USES (Uses)

(compns. contg. transition metal complex **catalysts**  
 for **bleaching** laundered fabrics with atm. oxygen)

IT 768-61-6P, 2-Hydroxymethyl-5-ethyl pyridine 772-71-4P,  
 2-Acetoxymethyl-5-methylpyridine 3010-05-7P, N-Benzyl amino acetonitrile  
 3099-28-3P, 2,6-Dichloromethylpyridine. 4152-09-4P, N-  
 Benzylethylenediamine 5371-70-0P, 4-Chloro-2,6-pyridinedicarboxylic acid  
 dimethyl ester 18522-92-4P, Sodium p-toluenesulfonamide 21852-60-8P,  
 2-Acetoxymethyl-5-ethyl pyridine 22940-71-2P, 2-Hydroxymethyl-5-  
 methylpyridine 24426-40-2P, N-Ethylaminoacetonitrile 52814-41-2P,  
 2-Acetoxymethyl-3-methylpyridine. 58088-50-9P 63071-09-0P,  
 2-Hydroxymethyl-3-methyl pyridine 89561-22-8P 98572-18-0P  
 260395-23-1P

RL: IMF (Industrial manufacture); RCT (Reactant);

**PREP (Preparation)**; RACT (Reactant or reagent)

(ligand precursor; compns. contg. transition metal  
**complex catalysts** for **bleaching** laundered  
fabrics with atm. oxygen)

IT 50-00-0, Formalin, reactions 70-55-3 74-88-4, Methyl iodide, reactions  
75-04-7, Ethylamine, reactions 100-39-0 100-46-9, N-Benzyl amine,  
reactions 104-90-5, 5-Ethyl-2-methyl pyridine 109-72-8, Butyllithium,  
reactions 109-76-2, 1,3-Propanediamine 109-81-9, N-  
Methylethylenediamine 110-72-5, N-Ethylethylenediamine 111-41-1  
583-61-9, 2,3-Dimethylpyridine 589-93-5, 2,5-Lutidine 1195-59-1,  
2,6-Pyridinedimethanol 1562-95-4, 2-Pyridyl ketone oxime 4377-33-7,  
2-Chloro-methylpyridine 6959-47-3, Picolylchloride hydrochloride  
7440-23-5, Sodium, reactions 7601-89-0, Sodium perchlorate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(ligand precursor; compns. contg. transition metal complex  
**catalysts** for **bleaching** laundered fabrics with atm. oxygen)

IT 80384-94-7P 115078-45-0P 223504-10-7P  
252909-23-2P 260395-25-3P 260395-26-4P  
260395-27-5P 260395-28-6P 260395-29-7P  
260395-30-0P 260395-31-1P  
RL: IMF (Industrial manufacture); RCT (Reactant);  
PREP (Preparation); RACT (Reactant or reagent)  
(ligand; compns. contg. transition metal **complex**  
**catalysts** for **bleaching** laundered fabrics with atm.  
oxygen)

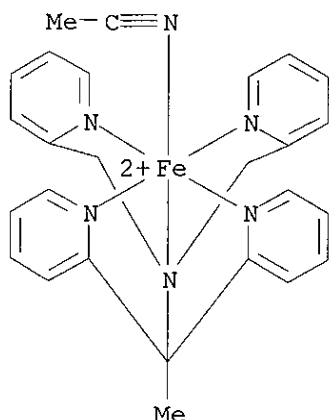
IT 75-05-8, Acetonitrile, reactions 115078-43-8 136768-57-5  
172300-86-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(ligand; compns. contg. transition metal **complex**  
**catalysts** for **bleaching** laundered fabrics with atm.  
oxygen)

IT 223504-13-0P  
RL: RCT (Reactant); RACT (Reactant or reagent);  
PREP (Preparation); RACT (Reactant or reagent)  
(compns. contg. transition metal **complex catalysts**  
for **bleaching** laundered fabrics with atm. oxygen)

RN 223504-13-0 HCAPLUS  
CN Iron(2+), (acetonitrile)[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-  
bis[(2-pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-  
.kappa.N1,.kappa.N2]-, (OC-6-43)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

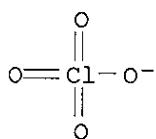
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CMF C26 H26 Fe N6  
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 2000:161417 HCAPLUS  
DN 132:209503  
TI Composition and method for bleaching a substrate such as laundered fabrics  
with atmospheric oxygen  
IN Appel, Adrianus Cornelis Maria; Carina, Riccardo Filippo; Delroisse,  
Michel Gilbert Jose; Feringa, Bernard Lucas; Girerd, Jean-jacques; Hage,  
Ronald; Kalmeijer, Robertus Everardus; Martens, Constantinus Franciscus;  
Peelen, Jacobus Carolina Johannes; Que, Lawrence; Swarthoff, Ton; Tetard,  
David; Thornthwaite, David; Tiwari, Laxmikant; Thijssen, Rob; Twisker,  
Robin Stefan; Veerman, Simon Marinus; Van Der Voet, Gerrit  
PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Limited  
SO PCT Int. Appl., 83 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 13

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000012667	A1	20000309	WO 1999-GB2876	19990901
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 CA 2342820 AA 20000309 CA 1999-2342820 19990901  
 AU 9956368 A1 20000321 AU 1999-56368 19990901  
 US 6242409 B1 20010605 US 1999-388167 19990901  
 EP 1109884 A1 20010627 EP 1999-943083 19990901  
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 BR 9913364 A 20020122 BR 1999-13364 19990901  
 WO 2000060043 A1 20001012 WO 2000-EP2587 20000322  
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 US 6617299 B1 20030909 US 2000-539756 20000331  
 WO 2001016270 A1 20010308 WO 2000-EP8075 20000816  
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WO 2001016261	A2	20010308	WO 2000-EP8078	20000816
WO 2001016261	A3	20010830		
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BR 2000013746	A	20020507	BR 2000-13746	20000816
BR 2000013744	A	20020514	BR 2000-13744	20000816
EP 1208185	A2	20020529	EP 2000-953179	20000816
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EP 1208186	A1	20020529	EP 2000-958470	20000816
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EP 1208188	A1	20020529	EP 2000-962335	20000816
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BR 2000013737	A	20020604	BR 2000-13737	20000816
AU 757351	B2	20030220	AU 2000-69973	20000816
WO 2001016272	A2	20010308	WO 2000-EP8144	20000817
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BR 2000013745	A	20020514	BR 2000-13745	20000817
EP 1208107	A2	20020529	EP 2000-969243	20000817
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US 6432900	B1	20020813	US 2000-650148	20000829
ZA 2001001671	A	20020228	ZA 2001-1671	20010228
ZA 2001001672	A	20020228	ZA 2001-1672	20010228
ZA 2001006939	A	20020822	ZA 2001-6939	20010822
US 2003045442	A1	20030306	US 2002-112992	20020401
PRAI GB 1998-19046	A	19980901		
GB 1999-6474	A	19990319		
GB 1999-7714	A	19990401		
GB 1999-7713	A	19990401		
WO 1999-GB2876	W	19990901		
WO 1999-GB2878	W	19990901		
GB 2000-4849	A	20000229		
GB 2000-4850	A	20000229		
GB 2000-4854	A	20000229		
GB 2000-4858	A	20000229		
GB 2000-4990	A	20000301		
GB 2000-6961	A	20000322		
WO 2000-EP2590	W	20000322		
WO 2000-EP8075	W	20000816		

WO 2000-EP8076 W 20000816  
 WO 2000-EP8078 W 20000816  
 WO 2000-EP8144 W 20000817  
 US 2000-650134 A3 20000829

OS MARPAT 132:209503

AB A method of bleaching a substrate such as laundered fabrics is provided that comprises applying to the substrate, in an aq. medium, an transition metal complex, so that the complex **catalyzes** bleaching of the substrate by atm. oxygen. A typical complex was manufd. by reaction of 2-pyridyl ketone oxime 1 h in EtOH-NH4OH contg. NH4OAc with Zn at reflux, reaction of the resulting bis(pyridin-2-yl)methylamine 40 h with picolyl chloride hydrochloride in aq. NaOH, redn. of the perchlorate salt of the 2nd intermediate with LiAlH4, lithiation of the 3rd intermediate with BuLi, methylation of 4th intermediate with MeI, and complexation of the resulting ligand with Fe(ClO4)2.6H2O.

IC ICM C11D003-395

CC 46-5 (Surface Active Agents and Detergents)  
 Section cross-reference(s): 78

ST bleaching laundered fabric atm oxygen transition metal complex  
**catalyst**; pyridinylmethyl bispyridinylaminoethane iron complex  
 bleaching **catalyst** manuf

IT Bleaching  
 Oxidation **catalysts**  
 (compns. contg. transition metal complex **catalysts** for  
 bleaching laundered fabrics with atm. oxygen)

IT Transition metal complexes  
 RL: **CAT (Catalyst use)**; USES (Uses)  
 (compns. contg. transition metal complex **catalysts** for  
 bleaching laundered fabrics with atm. oxygen)

IT 16941-11-0, Ammonium hexafluorophosphate 21324-39-0, Sodium  
 hexafluorophosphate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (complex precursor; compns. contg. transition metal complex  
**catalysts** for bleaching laundered fabrics with atm. oxygen)

IT 61920-87-4 116633-52-4 129766-11-6 129766-12-7 133523-08-7  
 136074-05-0 157966-71-7 167695-89-8 260395-40-2 260395-42-4  
 260395-44-6 260416-70-4 260431-32-1  
 RL: **CAT (Catalyst use)**; USES (Uses)  
 (compns. contg. transition metal complex **catalysts** for  
 bleaching laundered fabrics with atm. oxygen)

IT 223504-13-0P 223504-16-3P 252981-14-9P  
 252981-15-0P 260395-33-3P 260395-35-5P  
 260395-37-7P 260395-39-9P  
 RL: **CAT (Catalyst use)**; IMF (Industrial manufacture);  
**PREP (Preparation)**; USES (Uses)  
 (compns. contg. transition metal complex **catalysts**  
 for **bleaching** laundered fabrics with atm. oxygen)

IT 768-61-6P, 2-Hydroxymethyl-5-ethyl pyridine 772-71-4P 3010-05-7P,  
 N-Benzyl amino acetonitrile 3099-28-3P, 2,6-Dichloromethylpyridine.  
 4152-09-4P, N-Benzylethylenediamine 5371-70-0P, 4-Chloro-2,6-  
 pyridinedicarboxylic acid dimethyl ester 18522-92-4P, Sodium  
 p-toluenesulfonamide 21852-60-8P, 2-Acetoxyethyl-5-ethyl pyridine  
 22940-71-2P 24426-40-2P 52814-41-2P 58088-50-9P 63071-09-0P,  
 2-Hydroxymethyl-3-methyl pyridine 89561-22-8P **98572-18-0P**  
**260395-23-1P**  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
**PREP (Preparation)**; RACT (Reactant or reagent)  
 (ligand precursor; compns. contg. transition metal

**complex catalysts for bleaching laundered fabrics with atm. oxygen)**

IT 50-00-0, Formalin, reactions 70-55-3 74-88-4, Methyl iodide, reactions 75-04-7, Ethylamine, reactions 100-39-0 100-46-9, N-Benzyl amine, reactions 104-90-5, 5-Ethyl-2-methyl pyridine 109-72-8, Butyllithium, reactions 109-76-2, 1,3-Propanediamine 109-81-9, N-Methylethylenediamine 110-72-5, N-Ethylethylenediamine 111-41-1 583-61-9, 2,3-Dimethylpyridine 589-93-5, 2,5-Lutidine 1195-59-1, 2,6-Pyridinedimethanol 1562-95-4, 2-Pyridyl ketone oxime 4377-33-7, 2-Chloro-methylpyridine 6959-47-3, Picolylchloride hydrochloride 7440-23-5, Sodium, reactions 7601-89-0, Sodium perchlorate

RL: RCT (Reactant); RACT (Reactant or reagent)

(ligand precursor; compns. contg. transition metal complex

**catalysts for bleaching laundered fabrics with atm. oxygen)**

IT 80384-94-7P 115078-45-0P 223504-10-7P  
252909-23-2P 260395-25-3P 260395-26-4P  
260395-27-5P 260395-28-6P 260395-29-7P  
260395-30-0P 260395-31-1P

RL: IMF (Industrial manufacture); RCT (Reactant);

PREP (Preparation); RACT (Reactant or reagent)

(ligand; compns. contg. transition metal complex

**catalysts for bleaching laundered fabrics with atm. oxygen)**

IT 75-05-8, Acetonitrile, reactions 115078-43-8 136768-57-5  
172300-86-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(ligand; compns. contg. transition metal complex

**catalysts for bleaching laundered fabrics with atm. oxygen)**

IT 223504-13-0P

RL: RCT (Reactant); RACT (Reactant or reagent);

PREP (Preparation); RACT (Reactant or reagent)

(compns. contg. transition metal complex catalysts  
for bleaching laundered fabrics with atm. oxygen)

RN 223504-13-0 HCAPLUS

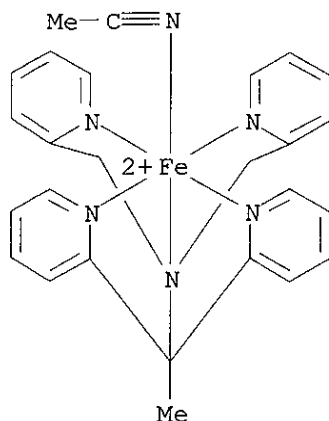
CN Iron(2+), (acetonitrile)[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-bis[(2-pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]-, (OC-6-43)-, diperchlorate (9CI) (CA INDEX NAME)

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CRN 223504-12-9

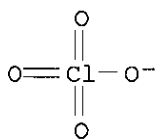
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CCI CCS



CM 2

CRN 14797-73-0  
CMF Cl O4



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

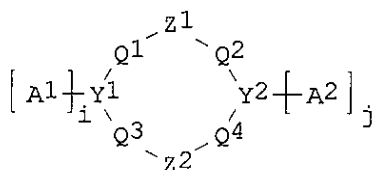
L26 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1999:811241 HCAPLUS  
DN 132:51495  
TI Bleach **catalysts**, ion pairs, complexes, and detergent  
formulations containing them for bleaching and cleaning of fabrics  
IN Banse, Frederic; Carina, Riccardo; Delroisse, Michel; Girerd,  
Jean-Jacques; Hage, Ronald; Simaan, Jalila Ariane; Tetard, David  
PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited  
SO PCT Int. Appl., 43 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 13

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9965905	A1	19991223	WO 1999-GB1850	19990610
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ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

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AU 9942821	A1	20000105	AU 1999-42821	19990610
AU 749512	B2	20020627		
BR 9911248	A	20010313	BR 1999-11248	19990610
EP 1087969	A1	20010404	EP 1999-957058	19990610
EP 1087969	B1	20030409		
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ZA 2000006985	A	20011128	ZA 2000-6985	20001128
ZA 2001001671	A	20020228	ZA 2001-1671	20010228
ZA 2001001672	A	20020228	ZA 2001-1672	20010228
PRAI GB 1998-12916	A	19980615		
GB 1998-19046	A	19980901		
GB 1999-6474	A	19990319		
WO 1999-GB1850	W	19990610		
OS MARPAT 132:51495				
GI				



- AB A bleach **catalyst** is a complex of a macrocyclic ligand I [Z1, Z2 = monocyclic or polycyclic arom. ring structures optionally contg. .gtoreq.1 heteroatoms, each arom. ring structure being optionally substituted by .gtoreq.1 substituents Y1 and Y2 selected from C, N, O, Si, P and S atoms; A1, A2 = H, alkyl, alkenyl and cycloalkyl, each of alkyl, alkenyl and cycloalkyl being optionally substituted, electron donating groups and electron withdrawing groups; i, j = 0, 1 and 2 to complete the valency of the groups Y1 and Y2; divalent Q1-Q4 = [(A3A4C)by3a(CA5A6)c]d; where 10> a + b + c + d .gtoreq.2; each Y3 = O, S, SO, SO2, (G1)(G2)NC(O), aryl, heteroaryl, P, and P(O); A3-A6 = A1 and A2].
- IC ICM C07D471-18  
 ICS C11D003-39; C07D471-18; C07D257-00; C07D221-00; C07D221-00
- CC 46-5 (Surface Active Agents and Detergents)  
 Section cross-reference(s): 27
- ST transition metal complex bleach **catalyst**; diazapyridinophane ligand transition metal complex
- IT Bleaching agents  
 (catalyst complex of transition metal and (substituted) diazapyridinophane; bleach **catalysts** for bleaching and cleaning of fabrics)
- IT 252981-14-9P 252981-15-0P 252981-16-1P 252981-17-2P 252981-19-4P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (bleach **catalyst**; bleach **catalysts** for bleaching and cleaning of fabrics)
- IT 3099-28-3P, 2,6-Dichloromethylpyridine 5371-70-0P 89561-22-8P  
 252909-23-2P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (bleach **catalysts** for bleaching and cleaning of fabrics)

IT 64-18-6, Formic acid, reactions 120-80-9, 1,2-Benzenediol, reactions 499-51-4, 4-Hydroxy-2,6-pyridine dicarboxylic acid 7719-09-7, Thionyl chloride 18522-92-4 115078-43-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (bleach **catalysts** for bleaching and cleaning of fabrics)

IT 7783-53-1, Manganese fluoride (MnF3)  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (complexation; bleach **catalysts** for bleaching and cleaning of fabrics)

IT 252909-26-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate ligand; bleach **catalysts** for bleaching and cleaning of fabrics)

IT 98572-18-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; bleach **catalysts** for bleaching and cleaning of fabrics)

IT 115078-45-0P 252909-27-6P  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (ligand; bleach **catalysts** for bleaching and cleaning of fabrics)

IT 10025-77-1, Iron trichloride hexahydrate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with diazapyridinophane ligand; bleach **catalysts** for bleaching and cleaning of fabrics)

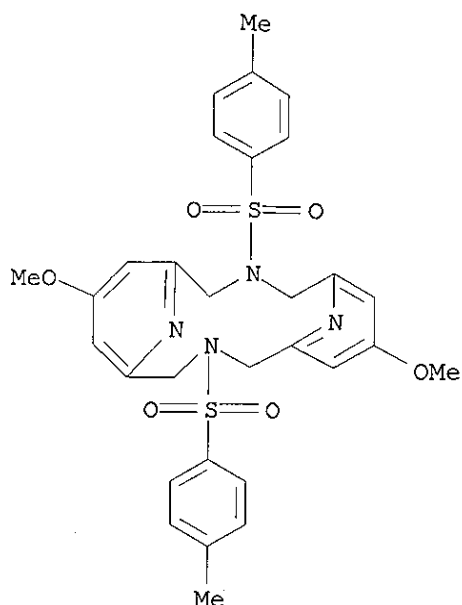
IT 10026-13-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with hydroxy-2,6-pyridine dicarboxylic acid; bleach **catalysts** for bleaching and cleaning of fabrics)

IT 1195-59-1, 2,6-Pyridinedimethanol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with thionyl chloride; bleach **catalysts** for bleaching and cleaning of fabrics)

IT 252909-26-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate ligand; bleach **catalysts** for bleaching and cleaning of fabrics)

RN 252909-26-5 HCAPLUS

CN 3,11,17,18-Tetraazatricyclo[11.3.1.15,9]octadeca-1(17),5,7,9(18),13,15-hexaene, 7,15-dimethoxy-3,11-bis[(4-methylphenyl)sulfonyl]- (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1999:727926 HCAPLUS  
DN 131:352875  
TI Bleach activation **catalysts** and peroxy compound-based bleach  
compositions containing them  
IN Nomura, Yasuo; Kubozono, Takayasu; Yamamoto, Nobuyuki  
PA Lion Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11314039	A2	19991116	JP 1999-46354	19990224
PRAI	JP 1998-58920		19980224		

OS MARPAT 131:352875

AB The **catalysts** with good stability in H<sub>2</sub>O are tri- or tetranuclear Mn complexes having N,N-bis(2-pyridyl)amine or its N-lower alkyl derivs. as ligands. Thus, Mn(OAc)<sub>3</sub>·2H<sub>2</sub>O was treated with N,N-bis(2-pyridylmethyl)-N-methylamine in EtOH and further treated with HClO<sub>4</sub> to give tetra(μ-oxo)mono(hydroxo)tris[N,N-bis(2-pyridylmethyl)-N-methylamine]trimanganese(IV,IV,IV) perchlorate, which improved bleaching efficiency of a NaHCO<sub>3</sub>-Na<sub>2</sub>CO<sub>3</sub> soln.

IC ICM B01J031-22

ICS C11D007-18; C11D007-32; C11D007-54; D06L003-02

CC 46-6 (Surface Active Agents and Detergents)

Section cross-reference(s): 67, 78

IT Bleaching agents

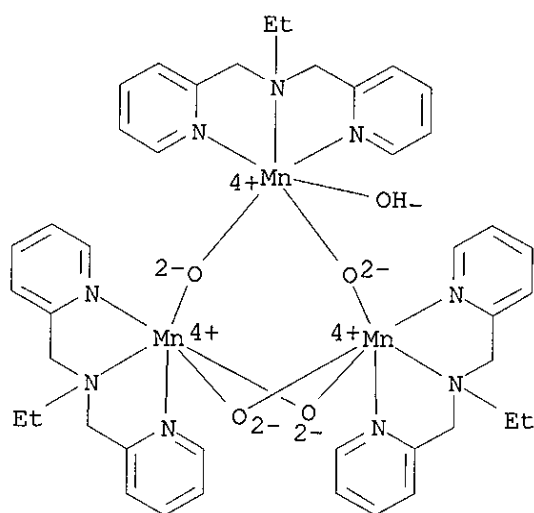
Oxidation **catalysts**

(polynuclear manganese complexes as **catalysts** for peroxy

- bleach activation)
- IT 142761-39-5P 203178-24-9P 203178-26-1P  
250356-83-3P  
RL: CAT (Catalyst use); IMF (Industrial manufacture);  
PRP (Properties); PREP (Preparation); USES (Uses)  
(polynuclear manganese complexes as catalysts for  
peroxy bleach activation)
- IT 19411-85-9, 2-Pyridinemethanamine, N-methyl-N-(2-pyridinylmethyl)-  
142723-81-7, 2-Pyridinemethanamine, N-ethyl-N-(2-pyridinylmethyl)-  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polynuclear manganese complexes as catalysts for  
peroxy bleach activation)
- IT 144-55-8, Sodium hydrogen carbonate, uses 497-19-8, Sodium carbonate,  
uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(polynuclear manganese complexes as catalysts for peroxy  
bleach activation)
- IT 142761-39-5P  
RL: RCT (Reactant); RACT (Reactant or reagent); PRP  
(Properties); PREP (Preparation); USES (Uses)  
(polynuclear manganese complexes as catalysts for  
peroxy bleach activation)
- RN 142761-39-5 HCAPLUS  
CN Manganese(3+), tris[N-ethyl-N-[(2-pyridinyl-.kappa.N)methyl]-2-  
pyridinemethanamine-.kappa.N1,.kappa.N2]hydroxytetra-.mu.-oxotri-,  
stereoisomer, triperchlorate (9CI) (CA INDEX NAME)

CM 1

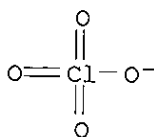
CRN 142761-38-4  
CMF C42 H52 Mn3 N9 O5  
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



L26 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1999:262098 HCAPLUS  
 DN 130:313501  
 TI Bleach activation using pentadentate iron complexes  
 IN Beers, Olaf Cornelis Petrus; Gribnau, Michiel Carolus Maria; Hage, Ronald;  
 Hermant, Roelant Mathijs; Kalmeijer, Robertus Everardus; Koek, Jean  
 Hypolites; Lamers, Christiaan; Russell, Stephen William; Twisker, Robin  
 Stefan; Feringa, Bernard Lucas; Roelfes, Johannes Gerhardus  
 PA Unilever PLC, UK; Unilever N.V.  
 SO Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 909809	A2	19990421	EP 1998-307975	19980930
	EP 909809	A3	19990721		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	CA 2248476	AA	19990401	CA 1998-2248476	19980928
	BR 9803859	A	19991207	BR 1998-3859	19981001
	ZA 9808963	A	20000403	ZA 1998-8963	19981001
PRAI	EP 1997-203019	A	19971001		
OS	MARPAT 130:313501				
AB	A bleach and oxidn. <b>catalyst</b> is provided comprising a <b>catalytically</b> active Fe complex including a defined pentadentate N contg. ligand. This type of Fe complex can activate hydrogen peroxide or peroxy acids and has favorable stain removal and remarkable dye transfer inhibition properties. In addn., a considerably improved stability of these Fe complex compds. in alk. aq. environment was obtained, in particular at the peroxy compd. concns. generally present in the fabric washing liquor.				
IC	ICM Cl1D003-395				
CC	46-4 (Surface Active Agents and Detergents)				
IT	<b>223504-13-0P 223504-16-3P</b> RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); <b>PREP</b> (Preparation); PROC (Process); USES (Uses) (activator; activation of peroxy <b>bleaching</b> compns. using pentadentate nitrogen iron <b>complexes</b> )				
IT	<b>1539-42-0P</b> , Bis(pyridin-2-yl)methylamine RL: RCT (Reactant); SPN (Synthetic preparation); <b>PREP</b> (Preparation); RACT (Reactant or reagent) (intermediate; activation of peroxy <b>bleaching</b> compns. using pentadentate nitrogen iron <b>complexes</b> )				
IT	<b>223504-10-7P</b>				

RL: RCT (Reactant); SPN (Synthetic preparation);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (ligand; activation of peroxy bleaching compns.  
 using pentadentate nitrogen iron complexes)

IT 223504-13-0P

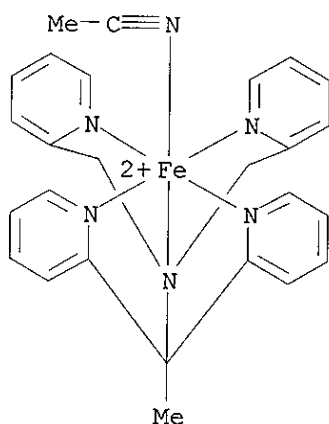
RL: RCT (Reactant); SPN (Synthetic preparation);  
 PREP (Preparation); RACT (Reactant or reagent); PROC  
 (Process); USES (Uses)  
 (activator; activation of peroxy bleaching compns. using  
 pentadentate nitrogen iron complexes)

RN 223504-13-0 HCAPLUS

CN Iron(2+), (acetonitrile)[.alpha.-methyl-.alpha.-(2-pyridinyl-.kappa.N)-N,N-  
 bis[(2-pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-  
 .kappa.N1,.kappa.N2]-, (OC-6-43)-, diperchlorate (9CI) (CA INDEX NAME)

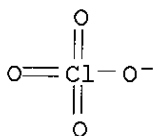
CM 1

CRN 223504-12-9  
 CMF C26 H26 Fe N6  
 CCI CCS



CM 2

CRN 14797-73-0  
 CMF Cl O4

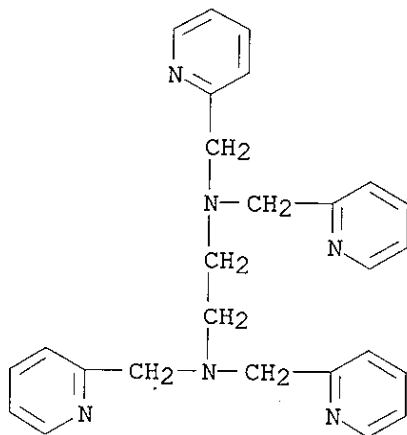


L26 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1998:388926 HCAPLUS  
 DN 129:110447  
 TI Transition metal complex bleaching catalysts and peroxy

bleaching compositions containing them  
 IN Yamamoto, Nobuyuki; Kubozono, Takayasu; Ono, Junji; Fukuda, Yutaka  
 PA Lion Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10156188	A2	19980616	JP 1996-322963	19961203
PRAI	JP 1996-322963		19961203		
OS	MARPAT 129:110447				
GI	For diagram(s), see printed CA Issue.				
AB	The bleaching <b>catalysts</b> comprise (A) N-contg. ligands [A(CHR1)n]2N(CHR3)pXr(CHR4)qN[(CHR2)mB]2 or I [X = CR5(OH), NR5, O, Q1; Y = CR5(OH), Q1; A, B = NR6R7, N:CR3R4, Q2-Q5; R1-R5, R15, R16 = H, (substituted) alkyl, cycloalkyl, aryl; each R8 = (substituted) alkyl, alkoxy, halo, CN, NR12R13, N:R12, N+R12R13R14, pyridyl, pyridinium, SO3H, thienyl, CO2H, OH; R6, R7, R9-R14 = H, OH, (substituted) alkyl, cycloalkyl, aryl; m, n = 0-2; p, q = 0-3; r = 0, 1; s = 2-5; t = 0-4; u = 2-7; v, w = 0-7] and (B) transition metals. The bleaching compns. contain the above bleaching <b>catalysts</b> and peroxy compds. Thus, a bleaching compn. contg. H2O2 and a Mn complex with N,N,N',N'-tetrakis[(2-pyridyl)methyl]-1,3-diamino-2-propanol [prepd. from 2-(chloromethyl)pyridine and 1,3-diamino-2-propanol] showed good bleaching with respect to stains from curry, red wine, and tea.				
IC	ICM B01J031-22				
CC	ICS C11D003-395; C11D007-54; D06L003-00; D21C009-16				
ST	46-5 (Surface Active Agents and Detergents)				
IT	transition metal complex bleaching <b>catalyst</b> ; peroxy bleaching compn transition metal complex				
IT	Detergents (laundry; peroxy bleaching compns. contg. transition metal complex bleaching <b>catalysts</b> )				
IT	Bleaching agents Oxidation <b>catalysts</b> (peroxy bleaching compns. contg. transition metal complex bleaching <b>catalysts</b> )				
IT	16858-02-9P, N,N,N',N'-Tetrakis[(2-pyridyl)methyl]ethylenediamine RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses) (ligand; peroxy bleaching compns. contg. transition metal complex bleaching <b>catalysts</b> )				
IT	7439-96-5DP, Manganese, 1,3-bis[bis(2-pyridylmethyl)amino]-2-propanol complex, uses 122413-32-5DP, manganese complex RL: CAT (Catalyst use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses) (peroxy bleaching compns. contg. transition metal complex bleaching <b>catalysts</b> )				
IT	107-15-3, Ethylenediamine, reactions 616-29-5, 1,3-Diamino-2-propanol 6959-47-3, 2-(Chloromethyl)pyridine hydrochloride RL: RCT (Reactant); RACT (Reactant or reagent) (peroxy bleaching compns. contg. transition metal complex bleaching <b>catalysts</b> )				
IT	7722-84-1, Hydrogen peroxide, uses RL: TEM (Technical or engineered material use); USES (Uses) (peroxy bleaching compns. contg. transition metal complex bleaching				

**catalysts)**  
 IT 16858-02-9P, N,N,N',N'-Tetrakis[(2-pyridyl)methyl]ethylenediamine  
 RL: CAT (Catalyst use); IMF (Industrial manufacture);  
 PREP (Preparation); PREP (Preparation)  
 (ligand; peroxy bleaching compns. contg. transition  
 metal **complex bleaching catalysts**)  
 RN 16858-02-9 HCAPLUS  
 CN 1,2-Ethanediamine, N,N,N',N'-tetrakis(2-pyridinylmethyl)- (9CI) (CA INDEX  
 NAME)



L26 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1998:31385 HCAPLUS  
 DN 128:76852  
 TI Metal complex **catalysts** for oxidative bleaching in laundry  
 IN Hermant, Roelant Mathijs; Jong, Bas A. M. J.  
 PA Unilever N.V., Neth.; Unilever PLC  
 SO PCT Int. Appl., 27 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9748787	A1	19971224	WO 1997-EP2322	19970429
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
CA 2257891	AA	19971224	CA 1997-2257891	19970429
AU 9728928	A1	19980107	AU 1997-28928	19970429
EP 906402	A1	19990407	EP 1997-922991	19970429
R:	DE, ES, FR, GB, IT			
BR 9709798	A	19990810	BR 1997-9798	19970429
ZA 9705068	A	19981209	ZA 1997-5068	19970609
US 6022490	A	20000208	US 1997-878742	19970619



PRAI EP 1996-201702 19960619  
 WO 1997-EP2322 19970429

AB A bleach and oxidn. **catalyst** is provided comprising a **catalytically** active metal complex having a poly-dentate ligand contg. at least 6 hetero atoms. Such metal complexes can activate hydrogen peroxide, peroxy acids or mol. oxygen and were found to have both favorable stain removal and remarkable dye transfer inhibition properties. A typical complex was manufd. by reaction of 2-picolyyl chloride with ethylenediamine, and complexation of the ligand with Fe(ClO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O.

IC ICM C11D003-39  
 ICS B01J031-18; C07F015-02; C07F013-00

CC 46-5 (Surface Active Agents and Detergents)

ST laundry bleach oxidative **catalyst** metal complex; iron chloropicoline ethylenediamine complex bleach **catalyst**

IT Bleaching  
 Oxidation **catalysts**  
 (metal complex **catalysts** for oxidative bleaching in laundry)

IT Peroxy acids  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (metal complex **catalysts** for oxidative bleaching in laundry)

IT 107-15-3, 1,2-Ethanediamine, reactions 4377-33-7, 2-Picolyl chloride 4741-99-5, N,N'-Bis(2-aminoethyl)-1,3-propanediamine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (ligand precursor; metal complex **catalysts** for oxidative bleaching in laundry)

IT 16858-02-9P 200719-69-3P, 1,1,4,8,11,11-Hexakis(pyridin-2-ylmethyl)-1,4,8,11-tetraazaundecane  
 RL: IMF (Industrial manufacture); RCT (Reactant);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (ligand; metal complex **catalysts** for oxidative bleaching in laundry)

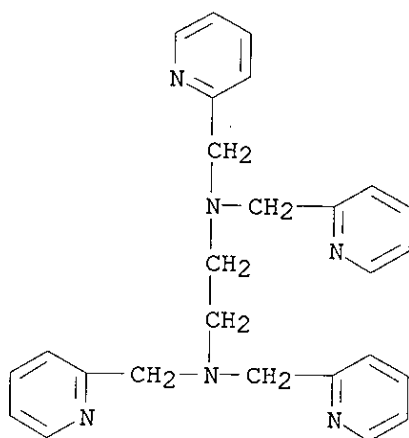
IT 61920-87-4P 200720-72-5P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture);  
 PREP (Preparation); USES (Uses)  
 (metal complex **catalysts** for oxidative bleaching in laundry)

IT 7722-84-1, Hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>), processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (metal complex **catalysts** for oxidative bleaching in laundry)

IT 16858-02-9P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (ligand; metal complex **catalysts** for oxidative bleaching in laundry)

RN 16858-02-9 HCAPLUS

CN 1,2-Ethanediamine, N,N,N',N'-tetrakis(2-pyridinylmethyl)- (9CI) (CA INDEX NAME)



L26 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1998:31316 HCAPLUS  
 DN 128:90357  
 TI Iron complexes for bleach activation and stereospecific oxidation  
**catalysts**

IN Que, Lawrence, Jr.; Kim, Cheal; Kim, Jinheung; Zang, Yan  
 PA University of Minnesota, USA  
 SO PCT Int. Appl., 40 pp.  
 CODEN: PIXXD2

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9748710	A1	19971224	WO 1997-US10764	19970620
	W: CA, JP, KR, SG				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5850086	A	19981215	US 1996-670794	19960621
	US 6107528	A	20000822	US 1998-204132	19981202
PRAI	US 1996-670794	A	19960621		

AB The complexes [LmFemXn]zYq (L = tetradentate, non-tetraaza, macrocyclic ligand; X = nitrile; Y = counterion; m = 1-3; n = 0-7; z = charge of complex; q = z/charge Y) are stable to oxidn. and useful as activators for bleaches in detergents and as **catalysts** for stereosp. oxidn. The reaction of equimolar amts. of tris(2-pyridinylmethyl)amine (I) perchlorate and Fe(ClO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O in MeCN gave 92% [Fe(I)(MeCN)<sub>2</sub>](ClO<sub>4</sub>)<sub>2</sub>·2H<sub>2</sub>O (II). Use of II to activate H<sub>2</sub>O<sub>2</sub> in bleaching detergents and as a **catalyst** in the oxidn. of cycloalkenes to cycloalkenols and of cycloalkanes to cycloalkanols are exemplified.

IC ICM C07F015-02

ICS C11D003-39; B01J031-18; C07B033-00

CC 46-6 (Surface Active Agents and Detergents)

ST iron complex **catalyst** oxidn; bleach activator iron complex;  
 detergent bleach activator; cycloalkane oxidn **catalyst**;  
 cycloalkene oxidn **catalyst**; trispyridylmethylamine iron complex

IT Amines, uses

RL: CAT (Catalyst use); USES (Uses)

(heterocyclic, iron complexes; iron complexes for bleach activation and stereospecific oxidn. **catalysts**)

IT Cycloalkanes  
Cycloalkenes  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(iron complexes as **catalysts** for oxidn. of cycloalkanes)

IT Nitriles, uses  
RL: **CAT (Catalyst use)**; **USES (Uses)**  
(iron complexes; iron complexes for bleach activation and stereospecific oxidn. **catalysts**)

IT Oxidation **catalysts**  
(stereospecific; iron complexes for stereospecific oxidn. **catalysts**)

IT 75-91-2, tert-Butyl hydroperoxide 7722-84-1, Hydrogen peroxide (H2O2), reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(iron complexes as **catalysts** for oxidn. by peroxides)

IT 588-59-0, Stilbene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(iron complexes as **catalysts** for oxidn. of arylalkenes)

IT 110-82-7, Cyclohexane, reactions 292-64-8, Cyclooctane 2207-01-4, cis-1,2-Dimethylcyclohexane 6876-23-9, trans-1,2-Dimethylcyclohexane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(iron complexes as **catalysts** for oxidn. of cycloalkanes)

IT 110-83-8, Cyclohexene, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(iron complexes as **catalysts** for oxidn. of cycloalkenes)

IT 112-24-3D, iron complexes 4608-34-8D, iron complexes 33527-91-2D, iron complexes 64019-57-4D, iron complexes 85264-48-8D, iron complexes 113749-54-5D, iron complexes 149860-22-0D, iron complexes 200814-91-1D, iron complexes 200814-92-2D, iron complexes 200868-93-5D, iron complexes  
RL: **CAT (Catalyst use)**; **USES (Uses)**  
(iron complexes for bleach activation and stereospecific oxidn. **catalysts**)

IT 191474-42-7P  
RL: **CAT (Catalyst use)**; **IMF (Industrial manufacture)**;  
**PREP (Preparation)**; **USES (Uses)**  
(iron complexes for bleach activation and stereospecific oxidn. **catalysts**)

IT 191474-42-7P  
RL: **CAT (Catalyst use)**; **IMF (Industrial manufacture)**;  
**PREP (Preparation)**; **USES (Uses)**  
(iron complexes for bleach activation and stereospecific oxidn. **catalysts**)

RN 191474-42-7 HCAPLUS

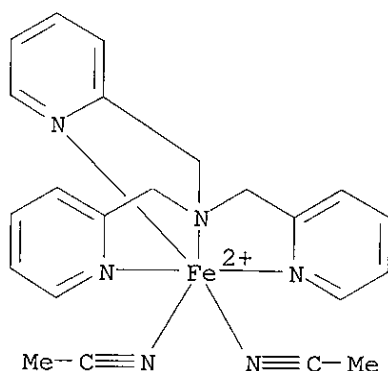
CN Iron(2+), bis(acetonitrile)[N,N-bis[(2-pyridinyl-.kappa.N)methyl]-2-pyridinemethanamine-.kappa.N1,.kappa.N2]-, (OC-6-32)-, diperchlorate (9CI)  
(CA INDEX NAME)

CM 1

CRN 191474-41-6

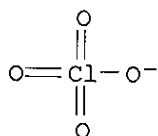
CMF C22 H24 Fe N6

CCI CCS



CM 2

CRN 14797-73-0  
CMF Cl O4



L26 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2003 ACS on STN  
AN 1997:537591 HCAPLUS  
DN 127:137378  
TI Bleaching system containing bis- and tris(.mu.-oxo)dimanganese complex salts  
IN Tafesh, Ahmed; Beller, Matthias; Friderichs, Vera; Reinhardt, Gerd  
PA Hoechst A.-G., Germany  
SO Eur. Pat. Appl., 11 pp.  
CODEN: EPXXDW  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 783035	A2	19970709	EP 1996-120743	19961223
	EP 783035	A3	19980225		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL				
	DE 19600159	A1	19970710	DE 1996-19600159	19960104
	JP 09194886	A2	19970729	JP 1996-350981	19961227
	CA 2194342	AA	19970705	CA 1997-2194342	19970103
	US 5942152	A	19990824	US 1997-775354	19970103
PRAI	DE 1996-19600159		19960104		

OS MARPAT 127:137378

AB [LMn(.mu.-O)a(.mu.-OR)bMnL]xAy [R = C2-8 acyl, L = ligands such as N,N-bis(2-pyridylmethyl)-N-methylamine and N,N,N',N'-tetrakis(2-pyridylmethyl)-1,2-ethylenediamine, A = anion, a = 1-3, b = 0 when a = 2 or 3 and 2 when a = 1, x = 2 or 3, y = amt. of A to balance the pos.

charge] are useful as **catalysts** for oxidn. of org. compds. in bleaching systems for textiles.

IC ICM C11D003-39

CC 46-5 (Surface Active Agents and Detergents)

ST manganese complex oxidn **catalyst** bleaching textile; oxo acyl pyridylamine dimanganese oxidn **catalyst**

IT Bleaching  
Oxidation **catalysts**  
(inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

IT Peroxides, uses  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

IT Detergents  
(laundry; inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

IT 112436-71-2, Sodium benzoxybenzenesulfonate  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(bleaching system with sodium perborate and; inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

IT 127-09-3, Sodium acetate 156-54-7, Sodium butyrate 7601-89-0, Sodium perchlorate **16858-02-9**, N,N,N',N'-Tetrakis(2-pyridylmethyl)ethylenediamine 17084-13-8, Potassium hexafluorophosphate **19411-85-9**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(complex precursor; inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

IT **189204-03-3P 193141-14-9P 193141-16-1P 193141-18-3P 193141-20-7P**  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

IT 10361-76-9, Potassium peroxomonosulfate 11138-47-9, Sodium perborate 15630-89-4, Sodium percarbonate 128275-31-0  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

IT **16858-02-9**, N,N,N',N'-Tetrakis(2-pyridylmethyl)ethylenediamine  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation)  
(complex precursor; inorg. peroxide bleaching system contg. bis- and tris(.mu.-oxo)dimanganese complex salts as oxidn. **catalysts** for laundry detergents)

RN 16858-02-9 HCAPLUS

CN 1,2-Ethanediamine, N,N,N',N'-tetrakis(2-pyridinylmethyl)- (9CI) (CA INDEX NAME)

